Environmental Assessment Report
Project Application

Albert Avenue and Thomas Street, Chatswood

Mixed Use Development

Submitted to
Department of Planning
On Behalf of Welles Thomas Pty Ltd

December 2009 ■ 09141

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JBA Urban Planning Consultants Pty Ltd operates under a Quality Management System. This report has been prepared and reviewed in accordance with that system. If the report is not signed below, it is a preliminary draft.

This report has been prepared by: Kim Shmuel

Signature  Date 23/12/09

This report has been reviewed by: Gordon Kirkby

Signature  Date 23/12/09

Statement of Validity

This Environmental Assessment has been prepared and submitted under Part 3A of the *Environmental Planning and Assessment Act* 1979 (as amended) by:

Environmental Assessment

Name	Kim Shmuel
Qualifications	BA MURP MPIA CPP
Company	JBA Urban Planning Consultants Pty Ltd
Address	Level 7, 77 Berry Street North Sydney NSW 2060

Project Application

Applicant Name	Welles Thomas
Applicant Address	Suite 22, Level 4, 12 Thomas Street Chatswood NSW 2067
Land to be developed	Thomas Street Car Park (Thomas Street and Albert Avenue, Chatswood)
Proposed development	Mixed Use Development
Environmental Assessment	An Environmental Assessment (EA) is attached
Certificate	I certify that I have prepared the content of this Environmental Assessment and to the best of my knowledge: ▪ It is in accordance with the Environmental Planning and Assessment Act and Regulation. ▪ It is true in all material particulars and does not, by its presentation or omission of information, materially mislead.
Signature	
Name	Kim Shmuel
Date	23 December 2009

Contents

Figures

Tables

Appendices

F Quantity Surveyors Statement
WT Partnership

G Traffic and Parking Assessment
Transport and Traffic Planning Associates

H Noise and Vibration Assessment
Acoustic Logic Consultancy

I Design Statement and Residential Flat Design Code Table of Compliance
PTW Architects and JBA Urban Planning Consultants

J BASIX Certificate and Stamped plans

K Comparable Height Study
PTW Architects

L Shadow Diagrams
PTW Architects

M ESD Report
George Floth

N Stormwater Plans and Report
George Floth

O Table of Compliance – Part I17.9 Willoughby DCP 2006
JBA Urban Planning Consultant

P Geotechnical Report
Jeffery Katauskas Pty Ltd

Q Wind Assessment
Windtech

R Structural Statement
Birzulis Associates Pty Ltd

S View Analysis
PTW Architects

T Options Analysis
PTW Architects

Executive Summary

This submission to the Department of Planning comprises an Environmental Assessment for a Project Application under Part 3A of the Environmental Planning and Assessment Act. It relates to the development of a mixed use development at Thomas Street and Albert Avenue, Chatswood. The site on which the development is proposed currently operates as a public car park. The proposed development will comprise of a residential tower, commercial tower and ground floor retail with pedestrian plaza and basement car park accommodating car parking for the new development, as well as 250 public parking spaces.

The project presents an opportunity to develop a currently underutilised site in the Chatswood CBD for appropriate uses whilst still providing public carparking in excess of the number of carparking spaces currently provided on the site.

A request for consideration of the proposal under Part 3A was made to the Department on 27 March 2009. The Director General's Requirements were provided to the proponent on 21 June 2009.

This submission is in accordance with the Department's guidelines for Project Applications lodged under Part 3A, and addresses the issues raised in the Director General's Requirements.

The site on which development is proposed is located in an established part of the Chatswood CBD at the boundary between the Chatswood Commercial precinct to the north and residential development to the south. The site is in close proximity to the Chatswood Rail Station as well as an extensive number of retail centres. Given the site's location at the junction of retail, commercial and residential uses, it is imminently suited to the proposed mixed use development.

The primary environmental planning instrument applying to the site is *Sydney Regional Environmental Plan 5 – Chatswood Town Centre* (now a deemed SEPP) which provides the zoning and development controls for the site. The provisions of Willoughby City Council's local environmental plan and development control plan have also been taken into account in the design of a proposed development for the site.

Extensive discussions with Willoughby City Council's planning staff and Councillors have been undertaken in the development of an appropriate design for the site. A detailed environmental assessment of the proposed development is provided below which finds that the proposal will not result in any unacceptable environmental impacts and will result in a high quality development on this currently-underutilised site.

1.0 Introduction

This Environmental Assessment Report (EAR) is submitted to the Minister for Planning (the Minister) pursuant to Part 3A of the Environmental Planning and Assessment Act 1979 (EP&A Act). This is to fulfil the *Environmental Assessment Requirements* issued by the Director General (DG) for the preparation of an Environmental Assessment of a Project Application for mixed use development on the site of the existing Thomas Street Council car park at Thomas Street and Albert Avenue Chatswood.

The planning and design concept for the Scheme includes:

- Provision of a high quality mixed use development across separate residential and commercial towers with ground floor retail uses which activate the pedestrian thoroughfare linking Thomas Street and Albert Avenue;
- Provision of a basement car park to accommodate the needs of the development as well as provide public car parking to serve the casual parking needs of the Chatswood Commercial Precinct;
- Locating the residential tower to accommodate good solar access and cross-ventilation to achieve compliance with *State Environmental Planning Policy 65 – Design Quality of Residential Flat Development* (SEPP 65); and
- Provision of an A-grade office commercial tower suited to the Chatswood CBD office market.

The report has been prepared by JBA Urban Planning Consultants Pty Ltd (JBA), for the proponent, Welles Thomas Pty Ltd (Welles Thomas) and is based on design information provided by PTW Architects (PTW) and supporting technical documents provided by the expert consultant team.

This EAR describes the site, its environs and the proposed development, and includes an assessment of the proposal in accordance with the Director-General's Environmental Assessment Requirements (DGRs) under Part 3A of the EP&A Act. It should be read in conjunction with the information contained within and appended to this report. The report is structured as follows:

Section 1: Introduction, overview of the project, background, project team and approvals process.

Section 2: Site analysis, overview of existing site conditions, and summary of opportunities and constraints.

Section 3: The current strategic and statutory planning framework and context applying to the site.

Section 5: The project description design including key elements for which project approval is sought.

Section 6: Environmental assessment of the Project Application.

Section 7: Draft Statement of Commitments.

Section 8: Conclusion

The Appendices include the range of technical studies undertaken to inform the Project Application and its environmental assessment. These studies address the Director General's requirements for the environmental assessment. They provide a technical assessment of the environmental impact of the proposed development, and recommend proposed mitigation measures to manage potential environmental impacts associated with the proposal.

1.1 Background

In June 2007, Willoughby Council (Council) entered into a contract with Welles Thomas for sale of the Council car park site at Thomas Street and Albert Avenue with provision for 250 car spaces being returned back to Council for a public car park. The other planning provisions imposed through the contract on the development included the following:

- achieve a high quality architectural design and finish that reflects Chatswood's sub-regional role whilst respecting the site's context and its relationship to its surrounds.
- emphasise the role of the site's gateway location within the Chatswood City Centre and provide for a built form that accommodates the land uses identified for the location and achieves a high standard of urban design.
- recognise and accommodate pedestrian desire lines as they support urban design outcomes and economic viability of business.
- provide a pedestrian landscaped area of a minimum 1000sqm along the axis of Katherine Street with northern sunlight access.
- encourage energy efficiency and sustainability and adopt a minimum requirement that any commercial building achieves a 5 star NABERS rating and any residential development exceeds the minimum BASIX requirements.
- encourage the development on the site of an iconic, premium grade, commercial office building and the adoption of the recommendation contained in the publication 'A Guide to Office Building Quality' prepared by the Property Council of Australia.

In March 2009, a Preliminary Environmental Assessment Report (PEAR) and request for the Minister's declaration of the project as a Major Project was submitted to the Department of Planning (the Department). It was also requested that the Minister authorise a Concept Plan for the project. The project, as described in the PEAR, included the following elements:

- Two towers - a 26-storey commercial office building over retail at ground floor of 26,940sqm (6.23:1); a 31-storey residential tower above ground level retail of 18,460sqm (169 apartments - 4.27:1) culminating in a total FSR of 10.5:1;
- a landscaped open space/public plaza area of 1,400sqm with café/outdoor seating and though site link between Albert and Thomas Street;
- public carparking for 250 spaces and private car parking (176 spaces);
- the office building to be designed and built as a Premium grade office building and 5 star AGBR rating.

The use of the Part 3A process with assessment by the Department was considered appropriate given Council's interest in the land.

At its meeting of 11 May 2009, Council considered a Council officer's report informing it of the lodgement the PEAR under Part 3A of the EP&A Act. The report advised Council that the proposal was not consistent with the current FSR and height controls under the *Sydney Regional Environmental Plan 5—Chatswood Town Centre* (SREP 5) but was consistent with the CBD Strategic Plan and the draft local environmental plan (LEP) for Chatswood which will permit a maximum FSR of 10.5:1 on the site.

Since lodging the PEAR with the Department, the applicant has reviewed the proposal in light of the current economic climate, funding sources and in relation to the quantum of commercial floor space and the ability to secure anchor tenants.

A number of meetings were held between the applicant, their architects and advisors together with the General Manager, Environmental Services Director, CBD Place Manager and Project Director - Property and Economic Development to discuss the project in detail and review the applicants proposed amendments.

On 28 July 2009, Welles Thomas wrote to Council seeking its support (in principle) to an amendment to the floor space mix proposed for the Project Application development on the Thomas Street car park site. The amendment involved a change to the floor space mix of the development with a change in residential floor area to 6:1, and a change in commercial floor area to 4.5:1.

On 4 August 2009, Council's General Manager responded to Welles Thomas in a letter stating that Council officers were prepared to submit a report for consideration by Council indicating as follows:

- A minimum FSR for the commercial development of 5.5:1 will be acceptable on the site consistent with the maximum FSR currently permitted under the 3(c2) Business zoning (and with a maximum FSR of 10.5:1 consistent with the proposed FSR control for the site under Council's draft LEP);
- The residential development is to incorporate a 4% affordable housing component.
- The commercial development is to incorporate a Premium Grade Office building.
- Serviced apartments or hotel use will not be supported to achieve the commercial component.
- Following a review of the access arrangements along Thomas Lane, it is necessary to alter the vehicular access arrangements into and out of Thomas Lane in order to cater for large vehicles. This requires realignment of the lane to run along the north-eastern boundary of the site to Thomas Street and can be provided by a right of way with no impact on the site area for the purposes of the FSR.

Council officers prepared a report to the Council which was considered at the Council meeting of 24 August 2009. In addition to the 'conditions' outlined in the General Manager's letter of 4 August 2009, the following additional criteria were established for the proposed development on the Thomas Street car park site:

- A commercial car parking rate of 1/200sqm would be considered subject to required traffic studies being undertaken. This rate is similar to that used for the Pacific Place (Mirvac) office component and is consistent with Councils' DCP Car Parking rate for offices.
- The proposed basement car park could utilise stratums under part of Fleet Lane and Thomas Street to improve the car park efficiency. This situation is similar to other existing developments approved in the Chatswood CBD such as the Chelsea in Brown Street.
- Building elements such as balconies or projecting floor sections on the upper levels of the residential development could potentially overhang/cantilever over the ground floor open space, subject to design and review and to create visual interest in the architectural form.
- The building heights will be 110m for the residential tower being approximately 33 residential storeys and 100m for the office tower being approximately 25 office height storeys. The building heights will be determined following detailed shadow analysis which will take into consideration issues such as the croquet lawns south of Ellis Street.
- The amended proposal will be consistent with the planning agreement guidelines which form part of the contract of sale.
- The amended proposal is able to comply with the urban design, sustainability, access, servicing bicycle facilities, parking, public open space area, land use and other requirements of *Willoughby Development Control Plan 2006* (WDCP) that apply to the site.

The following key recommendations were made and passed at the 24 August Council meeting:

- Welles Thomas be advised that, in principle and subject to design, Council supports the amendments to the commercial/residential mix of the development;
- the Officers bring back a report to Council on the Project Application as a basis for submission to the Department who are to assess the development; and
- a presentation be made to Councillors by the proponents on the Project Application.

A briefing to Councillors was held on 6 October 2009. A briefing meeting was also held with the Department on 25 September 2009.

Following detailed design development for the project it was considered unnecessary to submit a Concept Plan and it was decided that only a Project Application be submitted for the entire development. On 2 November 2009, JBA wrote to the Department requesting that the Minister revoke the authorisation of a Concept Plan for the project.

1.2 Environmental Assessment and Approvals Process

State Environmental Planning Policy (Major Developments) 2005 (the Major Developments SEPP) identifies development to which Part 3A of the EP&A Act applies, and for which the Minister is the consent authority. Clause 6 of the SEPP states that development, which in the opinion of the Minister is development of a kind referred to in Schedule 1 (Classes of Development), is declared to be a project to which Part 3A applies.

Clause 13 of Schedule 1 of the Major Development SEPP states that development for the purpose of residential, commercial or retail projects with a capital investment (CIV) of more than $100 million are classified as Major Development to be assessed under Part 3A of the EP&A Act. The proposed development will have a CIV of more than $100 million (see Section 5.4 below).

In accordance with Section 75B of the EP&A Act, and Clause 6 of the Major Developments SEPP, on 27 March 2009 Connybeare Morrision International Pty Ltd, on behalf of Welles Thomas, requested that the Minister:

- declare the proposed mixed use development to be a Major Development subject to Part 3A of the EP&A Act;
- authorise the preparation and lodgement of a Concept Plan for the site; and
- issue environmental assessment requirements for the Project Application.

On 24 April 2009, the Minister declared the proposed development to be a Major Development. The letter accompanying the declaration indicated that the Minister authorised the preparation of a Concept Plan for the proposal. As detailed above, the Minister has since been requested to revoke the authorisation of a Concept Plan for the development.

At the time the Minister issued her declaration, the CIV threshold for mixed use development under Clause 13 of Schedule 1 of the Major Development SEPP was $50 million. The CIV threshold was increased to $100 million in July 2009 and developments that exceeded this threshold were identified as non-discretionary Part 3A Projects.

On 21 June 2009, in accordance with Section 75F of the EP&A Act, the Director-General of the Department of Planning issued the requirements for the preparation of an Environmental Assessment to accompany a Project Application for the project.

A copy of the Director General's Environmental Assessment requirements is included in **Appendix A**.

This report constitutes the Environmental Assessment Report (EAR) for the Project Application for the site.

1.3 Project Team

An expert project team has been formed to deliver the project and includes:

Proponent	Welles Thomas
Architect	PTW Architects
Urban Planning	JBA Urban Planning Consultants
Landscape Architects	Site Image
Quantity Surveyors	WT Partnership
Geotechnical	Jefferey Katauskus Pty Lts
Civil and Structural Engineering	Birzulis Associates Pty Ltd
Stormwater	George Floth
Water and Flooding Engineers	George Floth
Sustainable Strategy Design	George Floth
Building Services	George Floth
Traffic and Transport	Transport and Traffic Planning Associates
Wind	Windtech
Surveyor	Insites
Noise and vibration	Acoustic Logic Consultancy

2.0 Site Analysis

2.1 Site Location and Context

The site is located within the Chatswood CBD, within the Willoughby local government area (LGA). The site is approximately 8km north of the Sydney CBD and is located within the Lower North Shore of the Sydney metropolitan area.

The site sits at the southern gateway of the Chatswood CBD on the corner of Albert Avenue and Albert Lane, between Albert Avenue and Thomas Street. The Pacific Highway is to the west of the site and the North Shore rail line is to the east of the site. The site is within walking distance of Chatswood railway station, which is a major interchange of both the North Shore rail line and Epping-Chatswood rail line. The easternmost point of the site is located some 50 metres from the rail line.

The site is identified as part of 'Civic Place' key developments sites for which specific design controls are specified under Council's local planning framework.

A Locality/Context Plan and Site Analysis Plan are included at **Appendix B** which considers the context in which the proposed development is located. The site sits within the Chatswood Commercial Precinct which is concentrated to the north of the site. The Chatswood Transport Interchange and Retail Precinct is located to the north-east of the site, and large areas of open space to the south-west including Chatswood Park and Chatswood Oval.

A site location plan is provided at **Figure 1** below:

Figure 1 – Site Location Plan

2.2 Site Description

The site is a reverse L-shaped block bounded by:

- Thomas Street to the north;
- Albert Lane to the west;
- Albert Avenue to the south; and
- Low rise commercial properties to the east.

The site has an area of approximately 4,323sqm and is bisected by Fleet Lane which runs east-west across the site. The nearest heritage item to the site is the Former Fire Station at 767 Pacific Highway which is located opposite the site on the western side of Albert Lane. Chatswood Public School located on the western side of the Pacific Highway is also identified as a local heritage item.

The overall gradient of the site is relatively flat with a gradient of 1 in 20 and a consistent fall from west to east of approximately 4.5m. As the site is located in an urban area there is minimal vegetation on the site and within the surrounding area. Two small groves of mature trees are located within the site, on the southern car parking area.

A survey plan of the site is attached at **Appendix C**.

2.3 Land Ownership and Legal Description

The site is legally described as:

- Lots 23-30 in DP2983, which form part of the southern block fronting Albert Avenue with a length of 80.465m and the width of 33.855m.
- Lot 13 of DP 2983 and Lots A and B of DP 381223, which is the northern block fronting Thomas Street with a length of 40.23m and a width of 33.855m.

The site is owned by Willoughby Council and used for public parking and is subject to a purchase contract with Welles Thomas.

2.4 Existing Development

The site is currently used as an on-grade, off-street public car park for approximately 200 vehicles in metered car parking bays. The southern portion of the car park is accessed from Albert Avenue and Fleet Lane. The northern portion of the car park is accessed from Thomas Street.

The site has been identified for redevelopment, subject to the incorporation of a public car park for a minimum of 250 vehicles to support the casual parking needs of the commercial precinct of the Chatswood CBD.

2.5 Surrounding Development

The surrounding area accommodates a diverse mix of retail, commercial, institutions, residential and recreation uses with a variety of contemporary high rise and older style lower rise commercial and residential developments that attract a diverse mix of populations and activities. The area also offers quality social, recreational and cultural infrastructure with surrounding recreational facilities and sports field. Education facilities and commercial and retail facilities are also located in close proximity to the site.

Westfield shopping centre is located some 400m to the east of the site and Chatswood Chase is located approximately 700m to the east.

To the north

North of the site, beyond Thomas Street, are high rise commercial and residential towers of over 15 storeys in height. Directly north-west of the site, adjacent to the northern car park at Thomas Street, and within the overall block of the subject site are a three-storey and a two-storey commercial building (20 and 22 Thomas Street).

To the south

To the south of the site are medium density residential developments of two to three storeys, with several developments of six to nine storeys in height. These developments are generally older stock. The site to the south-west (on the corner of Pacific Highway and Albert Avenue) is currently being developed presumably for medium to high density residential development.

To the west

Directly to the west of the site, fronting the Pacific Highway are a group of two-storey buildings and a seven storey building at 781 Pacific Highway, which are used for commercial purposes.

To the east

To the east of the site are medium to high density commercial, residential and retail developments.

2.6 Views and Vistas

The site and its future development are mainly visible from:

- The Pacific Highway to the south beyond the low rise apartments located along the western side of the Pacific Highway;
- The Garden of Remembrance directly east of the site adjacent to the railway line;
- Albert Avenue, heading west to the Pacific Highway;
- The public recreation area of Chatswood Park to the south-east; and
- Katherine Street directly north of the site.

The site is not clearly visible from the north, from Pacific Highway or Victoria Avenue, due to the cluster of high rise buildings which include the Vodafone Tower and the Bentleigh which obscure the view of the site. The site is not visible from the west of the Pacific Highway as the surrounding area slopes downward to the west from the Highway.

The surrounding area is built up with medium and low rise buildings surrounding the site to the south, east and west, with contemporary high rise buildings to the north of the site.

Photos of the site and surrounds are provided at **Figures 2** to **5** below.

Figure 2 – View from northern portion of car park looking south showing residential development on the southern side of Albert Avenue

Figure 3 – View from northern portion of car park showing commercial development adjoining the sites north-western boundary and commercial buildings on the northern side of Thomas Street

Figure 4 – Residential development adjoining the site's south-eastern boundary

2.7 Summary of Site Opportunities and Constraints

The following constraints affect the site:

- 250 public car parking spaces must be accommodated on the site and need to be incorporated into any development on the site;
- As Fleet Lane currently bisects the site, an alternative arrangement to accommodate through access from Fleet Lane is required; and
- The site is located in an established mixed use area of the Chatswood CBD and consideration needs to be given to the proposal's impact on surrounding development.

The following opportunities are provided on the site:

- The site's gateway location at the entrance to the Chatswood CBD provides an opportunity for development of a high-quality development that will emphasise the entrance to the Chatswood Commercial Precinct.
- The site is currently undeveloped (apart from the public carpark) and provides a 'blank canvas' for a high quality design on the site;
- The site has excellent access to public transport and can therefore support a reduced parking provision;
- The site has a frontage to both Thomas Street and Albert Avenue and can accommodate a through-site pedestrian link;
- The site has a northerly aspect to Thomas Street which provides excellent amenity for the residential component of the development as well as the public plaza/through-site link; and
- The site is located in an established part of the Chatswood CBD with good access to existing infrastructure and services.

3.0 Planning Framework and Context

3.1 Strategic Planning

The Draft Inner North Subregional Strategy

The Draft Inner North Subregional Strategy (Draft Strategy) provides strategic planning direction for the inner north region of Sydney. Chatswood is identified as a Major Centre under the draft Strategy which is defined as a:

> *Major shopping and business centre serving immediate subregional residential population usually with a full scale shopping mall, council offices, taller office and residential buildings, central community facilities and a minimum of 8,000 jobs.*

The Draft Strategy identifies Chatswood CBD as a mixed use centre located approximately 8km north of the Sydney CBD, well serviced by public transport with a central area of approximately 3 square km.

Over the next 25 years Chatswood will continue to develop as a key employment, retail and residential location and become a focus for cultural activities in the sub-region. Willoughby City Council is aiming to strengthen its commercial role to deliver an additional 95,000sqm of office space over the next 20 years. The Council has plans to strengthen the retail role of the CBD with a target increase in retail floor space of 40,000sqm. The centre has an employment capacity target of 7,300 additional jobs by 2031.

As a major centre, Chatswood will continue to provide additional housing near the centre to cater for growth. The attraction of Chatswood as a place to live, work and visit has been enhanced through the completion of the Epping-Chatswood Interchange, and the Civic Place development scheduled for completion by 2010, which will include theatres and other cultural facilities.

Draft Willoughby City Strategy

At its meeting on 7 September 2009, Council resolved to exhibit the Draft Willoughby City Strategy (Draft Willoughby Strategy) which provides a long-term vision and plan for the future of Willoughby LGA to help guide the decision making and planning for the next 15 years. The objectives outlined in the Strategy are to:

- Meet the demand for housing for an increasing population which include satisfying the housing needs for an increasingly ageing population.
- Protect local residential amenity.
- Promote well designed, ecologically sustainable development whilst maintaining the special character of neighbourhoods.
- Integrate adaptable measures into all new housing design.
- Implement affordable housing strategies.
- Provide growth in areas where housing densities are appropriate to the infrastructure and serviced and where quality living amenity for residents.
- Implement high density land uses within and around existing centres where appropriate infrastructure and services are located.
- Support and promote Willoughby as a major employment location, a place of economic growth and commerce within metropolitan Sydney, and attractive place for customers.
- Strengthen Chatswood as a place where people want to visit, work, live, invest and fine enjoyment.

The proposed development will achieve these objectives as it will satisfy the increased demand for housing in the locality, as well as provide a development with a high level of ESD and design quality. The proposed development will provide high-density residential development in close proximity to public transport and other services, as well as providing 4% of the units as affordable housing units. In addition, the commercial component of the development will promote the economic growth of Willoughby.

Draft Chatswood Centre Strategic Plan (2004)

The Draft Chatswood Centre Strategic Plan (2004) (Draft Chatswood Strategic Plan) identifies the vision for the Chatswood Town Centre to:

- Be a vibrant and multi-functional business district serving a local and regional role;
- Provide for city living;
- Be environmentally sustainable;
- Be characterised by visually interesting buildings and places with a diversity of activity at street level;
- Provide pleasant landscaped areas and public spaces for passive recreation and outdoor eating;
- Provide safe and easy access for all members of the community; and
- Be a centre where residential and commercial users complement each other.

The proposed development will meet a number of these objectives as it will provide a mix of uses on the site, including residential accommodation within the Chatswood CBD, outdoor dining, as well as a compatible commercial development. The proposed development will provide visually interesting buildings that achieve a high level of ESD performance.

NSW State Plan

The NSW State Plan aims to support jobs and attract business investment to NSW, as well as improve quality of life in NSW''s cities by providing attractive places to live, work and visit. In addition, the State Plan sets new targets and actions to increase the supply of affordable housing for low and moderate income households. According the State Plan, The Director-General of the Department and Minister for Planning have direct responsibility for achieving the above objectives.

In relation to the above goals, the NSW State Plan provides the following key actions:

- increase the percentage of the population living within 30 minutes by public transport of a city or major centre in Metropolitan Sydney; and
- provide capacity for 640,000 new dwellings between 2004 to 2031, including 445,000 in existing urban areas.

The proposed development will achieve the above objectives as it will provide some 24,000sqm of commercial/retail gross floor area (GFA) which will substantially increase employment capacity in the Chatswood CBD. In addition, the development will provide 208 high-quality residential units located in close proximity to existing employment opportunities, public transport facilities, and retail and service activities. The proposal will also support affordable housing objectives as 10% of the residential GFA will be provided as affordable housing. The proposed development will assist the State Government in achieving its objectives under the State Plan.

Urban Transport Statement

The NSW Urban Transport Statement outlines the State Government's priorities and initiatives for addressing current and future transport challenges, across and within Sydney, with a focus on passenger transport. The Statement is informed by the NSW State Plan and the Metropolitan Strategy, and compliments the State Infrastructure Strategy.

The Urban Transport Statement provides for the upgrade of a number of key transport corridors, implementation of new traffic management technologies, new bus priority program and an increase in rail capacity.

The proposed location of high density commercial, retail and residential development in proximity to the Chatswood railway station supports the vision of the Urban Transport Statement.

3.2 Statutory Planning

The following environmental planning instruments (EPIs) and development control plans apply to the site:

- *Environmental Planning and Assessment Act 1979* (EP&A Act);
- *State Environmental Planning Policy 55 – Remediation of Land* (SEPP 55);
- *State Environmental Planning Policy (Infrastructure) 2007* (SEPP Infrastructure);
- *State Environmental Planning Policy 65 – Design Quality of Residential Flat Development* (SEPP 65);
- *State Environmental Planning Policy (Building Sustainability Index) 2004* (SEPP BASIX);
- *Sydney Regional Environmental Plan No 5 – Chatswood Town Centre* (SREP 5);
- *Willoughby Local Environmental Plan 1995* (WLEP);
- Willoughby Development Control Plan 2006 (WDCP).

The applicable provisions of the above EPIs and DCPs are summarised in **Table 1** below:

Table 1 – Relevant EPIs/DCPs

EPI / DCP	Provision
EP&A Act	The proposed development is required to demonstrate consistency with the objectives in Section 5(a) of EP&A Act, which aim to encourage: (i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment, (ii) the promotion and co-ordination of the orderly and economic use and development of land, (iii) the protection, provision and co-ordination of communication and utility services, (iv) the provision of land for public purposes, (v) the provision and co-ordination of community services and facilities, and (vi) the protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats, and (vii) ecologically sustainable development, and (viii) the provision and maintenance of affordable housing.

EPI / DCP	Provision
SEPP 55	When assessing an application for development, the consent authority is required to consider whether the site on which development is proposed is contaminated and whether remediation is required to ensure the site is appropriate for the proposed use.
SEPP Infrastructure	Development involving RFBs of 75 or more units, or commercial development with floor area of 2,500sqm or greater, with access to a road that connects to a classified road is required to be referred to the RTA for comment. The proposed development will be accessed via Albert Avenue which connects to the Pacific Highway (a classified road) and will exceed the unit and commercial area thresholds above which developments must be referred to the RTA. The Project Application is required to be referred to the RTA for comment. SEPP Infrastructure also requires an acoustic assessment to be prepared for residential development within 60m of a rail corridor, and where residential development is likely to be adversely affected by noise from a busy road (roads with an average annual traffic volume of more than 40,000 vehicles). The Pacific Highway is classified as a busy road in accordance with the Infrastructure SEPP.
SEPP 65	All RFB development in NSW is required to demonstrate compliance with the ten design principles in SEPP 65, as well as demonstrate how the Rules-of-Thumb in the associated Residential Flat Design Code (RFDC) can be achieved.
SEPP BASIX	All new residential development in NSW is required to submit a BASIX certificate demonstrating compliance with the water and energy saving targets in SEPP BASIX.
SREP 5	SREP 5 establishes the zoning and development control framework for the Chatswood CBD (now a deemed SEPP).
Zoning	The site is located in Zone 3(c2) – Business Commercial. The objectives for the zone are as follows: - To consolidate this zone as Chatswood's main office core, and - To accommodate service retail users to the extent necessary to cater for local office needs, and - To permit residential uses while maintaining the predominant office use character of the zone, and - To realise a better balance between office parking supply and demand.

Permissible Uses	Permissible land uses in the zone include:
	- Commercial premises (other than car parking stations)
	- Residential flat buildings; and
	- Nominated retail and recreational/entertainment uses in Schedules 3 and 7 of SREP 5 which include the following:
	  - Arts and crafts facilities and hobby centres
	  - Art galleries and museums
	  - Child care facilities
	  - Cinemas
	  - Facilities for musical organizations
	  - Fitness centres
	  - Gymnasiums and other related sports facilities
	  - Meeting rooms and other multi-purpose halls for use or hire
	  - Multi-purpose youth centres including drop-in centres
	  - Offices for health and welfare workers and self-help groups
	  - Public conveniences
	  - Public information and resource centres
	  - Public swimming pools
	  - Skating rinks
	  - Squash courts

EPI / DCP	Provision
Permissible Uses continued...	- Tennis courts - Theatres, performances and exhibition spaces - Youth centres (such as voluntary coffee lounges) - Bakery - Chemist's shop - Confectionery shop and milk bar - Delicatessen - Fish and chip shop - Fruit and vegetable shop - Grocery and health food shop - Newsagent's shop - Stationery shop (books and newspapers) - Sandwich shop - Take-away food (other than drive-in) - Tobacconist
Retail trading in Zone 3(c2)	- The council shall not consent to development of land within Zone 3(c2) for use as a shop or premises for a purpose referred to in Schedule 3 of SREP 5 if the gross floor area (GFA) of the shop will exceed 150sqm. - A person shall not carry out development within Zone 3(c2) for a purpose referred to in Schedule 3 if more than 20% of the GFA of the development is used for that purpose.
Maximum Floor Space Ratio (FSR)	The following maximum FSRs apply to the site: - Total maximum – 5.5:1 - Maximum residential – 2.5:1 - Maximum commercial – 3:1
Maximum height	The maximum height of development on the site to be in accordance with WLEP (Amendment No 65) which is: - Northern portion of site – RL 150 - Southern portion of site – RL 130
Development in the vicinity of a heritage item	- The consent authority is required to consider any impacts that the proposal will have on heritage items within its vicinity, in particular the Former Fire Station at 767 Pacific Highway.
Restricted vehicular access from Albert Avenue	- The consent authority shall not consent to a development application which provides for general vehicular access from Albert Avenue to parking areas where, in the opinion of the consent authority, vehicular access is available from another street. - The consent authority may consent to a development application which provides for vehicular access from Albert Avenue for service vehicles only.
Provision of car parking on site	The consent authority must not consent to development on the site unless it is satisfied that a car parking station will be provided on or under the land, comprising not less than 200 car parking spaces in addition to any car parking required by the consent authority to serve the needs of any development on the site.
WLEP	
Applicability	Although the WLEP applies to all land within the Willoughby LGA, it only applies to the subject site to the extent that it amends SREP 5.
Height	The map accompanying WLEP (Amendment No 65) provides the following height controls for the site: - Northern portion of site – RL 150 - Southern portion of site – RL 130
Willoughby Local Housing	Clause 25B of the WLEP requires 4% of housing stock (or an equivalent monetary contribution) to be dedicated to Willoughby Council for the purposes of affordable rental housing. This clause only affects sites that fall within the Willoughby Local Housing Precinct of which the site does not form a part. However, it is understood that Council has required the dedication of residential units in accordance with its affordable housing scheme as part of the contract of sale for the site.

EPI / DCP	Provision
WDCP	
Part C3 –Sustainability Principle	Provided objectives and performance criteria for the improved sustainability of new development in the Willoughby LGA.
Part C4 – Transport Requirements for Development	The following parking requirement apply to the site: Residential Apartments (railway Precinct Zone 3(c2) - One-bedroom – 1 space - Two-bedroom – 1 space - Three-bedroom – 1.25 spaces - Visitors – 1 space per 4 apartments **Commercial Office** 1 space per 110sqm net floor area (NFA) Retail Shop 1 space per 25sqm NFA
C5 – Water Management	Provides controls and performance criteria for stormwater management and water quality control for new development within the Willoughby LGA.
C6 – Access, Mobility and Adaptability	Provides accessibility standards for new residential and commercial development in the Willoughby LGA including: - 50% of all units to be adaptable ie capable of being adapted to accommodate disabled access in accordance with AS1428.2; - Disabled access to be provided to and within every floor containing a dwelling required to be adaptable; - Disabled access to and within all the areas of facilities of the building where there is a reasonable expectation of access by any owner, occupier, employee or visitor to be provided in new commercial building and new retail premises. - Car parking for the residential component of the development - 1 accessible visitor space to be provided (in parking area with more than 50 spaces); and - Car parking for the commercial/retail component f the development - 3% of total car parking spaces to be provided as accessible.
C8 – Waste Management	Sets out the waste management requirements for new commercial, residential and retail development.
C11 – Safety by Design	Provides performance criteria and controls to ensure new development maximises safety and crime prevention in its design.
C14 – Development near a Rail Corridor	A noise and vibration report is required to accompany any application for development within 60m of a rail line.
C15 – Undergrounding of services	All services for new mixed use development to be located below ground.
Part D3 - Multi-Unit Housing and Mixed Use/ Commercial Residential Development	Provides detailed development controls to provide appropriate amenity and built form in new multi-unit residential developments and mixed use development.
Part E – Commercial Development	Provides specific development controls for commercial development.
Part I17 – Controls for Specific Site (Civic Place	This section of the DCP provides specific control for the Thomas Street car park site which forms part of the Civic Place sites.

4.0 Consultation

In accordance with Part 3A of the EP&A Act consultation is required to occur at the following stages:

- the Director General of the Department of Planning is required to consult with relevant public authorities in preparing the environmental assessment requirements for the Project Application; and
- the Director-General is required to advertise and exhibit the Environmental Assessment and appended reports and documentation.

In preparing the DGRs for the Environmental Assessment, it is understood that the Department consulted with Council, the RTA, the Ministry of Transport and the Department of Water and Energy. The comments and issues raised by these agencies have been were considered in preparing the DGRs and are included in **Appendix A**.

In addition to the above standard consultation, the proponent and project team have undertaken extensive consultation with Council as detailed in Section 1.1 above.

5.0 Project Description

The development involves a mixed use development comprised of the following:

- Five levels of basement parking accommodating a total of 506 parking spaces;
- A north-south orientated 26-storey residential tower (with plant room above) above a three-storey podium with ground floor and level 2 retail/cafe space located in the north-eastern part of the site fronting Thomas Street;
- An east-west orientated 18 storey commercial tower (with plant room on the roof and level 2) and a two-storey podium accommodating ground floor retail/café space and level 1 commercial office space located in the south-western part of the site fronting Albert Lane;
- A through-site pedestrian link between the towers linking Thomas Street and Albert Avenue;

Separate lift cores will be provided in the residential and commercial towers. Vehicle access to the basement car park will be provided from Albert Avenue in the south-eastern part of the site which will be provided as a left -in/left-out vehicle access. A lay-by is proposed at the Albert Avenue street frontage to provide a taxi set down point or loading area for large trucks (smaller loading vehicles will be accommodated within the basement car park). A right-of way providing vehicle access from Fleet Lane to Thomas Street will be provided at the site's eastern boundary.

5.1 Development of Appropriate Design Solution

A number of siting options were considered prior to finalising the currently-proposed design. The options were presented to both Council and the Department at consultation meetings prior to submission of the EAR (see Section 1.1).

Siting Options considered

Siting Options diagrams are included at **Appendix T**. Options 1 and 2 looked at pushing the bulk of the built form back towards Albert Avenue and provide a north facing plaza. This provided a more imposing frontage to Albert Avenue which was not considered appropriate given the interface with residential development on the southern side of Albert Avenue. Option 1 provided for a curved form along Albert Avenue to reduce the apparent frontage to the residential buildings across the road on Albert Avenue. Option 2 presented a slender tower to Albert Avenue but provides a more monolithic frontage. Both Options 1 and 2 provides for a through-site pedestrian link which was dominated by the tower above, which created a heavy form over the pedestrian access and was not considered appropriate from a safety perspective.

Option 3 separated the buildings to provide a linear public domain and a stronger through site connection. It also looked to reduce the bulk at the southern end of the site by pushing the residential tower as far north as possible. By separating the buildings the mass was broken down and both buildings could have highly efficient floor plates.

A variation of Option 3, which extended the podium to the south was selected as the appropriate design option. Although the variation on Option 3 concentrates the residential tower in the northern part of the site, it moves the bulk of the building away from the south-east corner of the site which adjoins low-density residential development, a particularly sensitive land use which would have been adversely impacted if the residential tower had been located to immediately adjoin the common boundary.

Criteria against which the siting options were considered.

A number of criteria were considered in selecting the most appropriate built form option for development on the site. These included:

- Pedestrian connectivity;
- Internal residential amenity;
- Separation distances and impacts on adjoining properties (particular focus was given to any impact on adjoining *residential* properties);
- Overshadowing impact;
- View impact; and
- Design quality

In relation to pedestrian connectivity, Option 3 was found to be the most appropriate as it allows unobstructed through site pedestrian access between Thomas Street and Albert Avenue with the commercial and residential towers defining the edges of the public open space. It also offered the best solution for providing amenity and good solar access to the public plaza. Options 1 and 2 were dominated by the tower form over the southern section of the public thorough-fare which reduced amenity and safety.

Internal residential amenity in the proposed residential tower was a significant consideration in developing the appropriate development option for the site. It was important to minimise the number of south facing apartments, provide for a development footprint that minimises building and apartment depth, as well as provide for an appropriate setback to the proposed commercial tower. Option 1 was not considered appropriate as it would result in a large proportion of south facing apartments and a substantial building depth. Option 2 did not accommodate an adequate separation to the proposed commercial tower. Option 3 was considered the most appropriate in respect to preservation of internal residential amenity in that it minimised the number of south facing apartments and provided a building depth that would encourage good daylight and ventilation access to the proposed units.

In terms of separation between adjoining building, an appropriate setback to the lower density residential dwelling to the east of the site (in the south-east corner) was provided by Option 3. Whereas Options 1 and 2 provided a minimal setback to this sensitive land use which was not considered appropriate. The building adjoining the site's eastern boundary to the north is a commercial building that would be less sensitive to privacy, overshadowing and other amenity impacts .The currently-proposed design provides for a 3 metre setback to the common boundary to the commercial building to the east. It is not expected that the site to the east would be redeveloped in the near future. However, the site is within Chatswood's commercial core and may be developed for office use. Were it to be development for a mixed use development it is expected that commercial development would be provided at podium level with a residential tower (set further back from the site's boundaries) above. The potential setback on the site to the east combined with the proposed 3 metre setback to the proposed residential tower is considered appropriate to preserve amenity between the buildings.

Overshadowing impacts were considered for all three Options. Whilst Option 3 appears to result in a more significant overshadowing impact then Options 1 and 2 (as demonstrated by the 12 noon June 21 shadow diagram in the Siting Option diagrams), the overshadowing impacts of the proposed scheme have been examined in detail in Section 6.4 below and have been found to be satisfactory. This aspect was considered to be outweighed by all the positive aspects associated with Option 3.

In terms of views, the residential tower in Option 3 presented as slim as possible an elevation to the north to minimise the impacts on views from the existing residential tower across from the site on Thomas Street and distanced itself from the residential buildings across Albert Avenue. It also provide for through site north-south views. Whilst Option 3 will limit views form the adjoining commercial building (to the east) looking west) these views are not considered significant and will not be lost from residential units. View lines are shown in the Siting Option diagrams at **Appendix T**.

From a design quality perspective Options 1 and 2 were considered bulky and inconsistent with other tower elements in the Chatswood CBD. Option 3 was considered the best option as it

- minimises impact on residential development to the south;
- presents a slender elevation along Thomas Street to the residential development to the north;
- provides the best outcome for public domain and pedestrian through site link at ground level;
- allows the best solar access to public spaces and residential apartments;
- maximises efficiency of floor plates for both towers; and
- provides A-grade commercial space in an iconic built form defining the southern edge of Chatswood CBD

5.2 Detailed Description of Proposal

A level by level description of the proposed development is provided in **Table 2** below. Architectural plans for the proposal are provided at **Appendix D**.

Table 2 – Detailed description of proposal

Level	Proposed

Basement Level 1	- 29 car parking spaces allocated as follows:
	  - 11 public spaces
	  - 18 residential spaces
	- Separate residential and commercial/retail waste storage areas;
	- Residential loading dock adjoining two truck bays;
	- Resident storage space;
	- Commercial loading area adjoining two truck bays;
	- Three courier bays;
	- Bicycle parking spaces and separate female and male change rooms/showers
	- Two security offices
	- Separate residential and commercial lift cores;
	- On-site detention and rainwater tank;
	- Substation and switch room;
	- Sprinkler valve and pump room; and
	- Two security offices and a small building management office.

Basement Level 2	- 114 car parking spaces allocated as follows:
	  - 75 public spaces
	  - 39 residential spaces
	- Plant room/storage space

Basement Level 3	- 121 car parking spaces allocated as follows:
	  - 82 public spaces
	  - 39 residential spaces

Level	Proposed

Basement Level 4	- 121 car parking spaces allocated as follows:
	  - 82 public spaces
	  - 39 residential spaces

Basement Level 5	- 121 car parking spaces allocated as follows:
	  - 57 residential spaces
	  - 64 commercial spaces

Ground Floor	- North-south through-site pedestrian link connecting Thomas Street and Albert Avenue; - Vehicle access to basement carpark from Albert Avenue; - Right-of-way from Fleet Lane along eastern boundary of site (in northern section only); Residential Tower - Retail/café tenancy with frontages to Thomas Street and pedestrian through-site link; - Three retail/cafe tenancies fronting pedestrian through-site link; - Residential lobby; and - Service/plant room Commercial Tower - Office lobby (accessed off pedestrian link/public plaza); - Two retail premises, one with a north-facing frontage to Fleet Lane and the other with a south-facing frontage to Albert Avenue.
Level 1	Residential Tower - Three retail/café/gym tenancies; - Male and female change rooms; - Plant room; - Storage space; and - Void over residential lobby. Commercial Tower - Void over commercial lobby; - Commercial office space; - Male, female and accessible toilets. - Glazed roof canopy over public plaza below linking the commercial and residential towers.
Level 2	Residential Tower - Resident facilities/gym; - Male and female change rooms; - Roof terrace off resident gym facility; - Three office/meeting rooms; - Manager's apartment; - Store rooms; and - Resident lap pool. Commercial tower - Plant room across all of level 2
Levels 3 - 6	Residential Tower - Four 2-bed units - Two dual-key 2-bed units; - Two 1-bed units; - Two studio units; and - Garbage chute in corridor links to residential waste storage room below. Commercial Tower - Commercial office space; and - Male, female and accessible toilets.

Level	Proposed
Levels 7 - 10	Residential tower - Six 2-bed units - Two 1-bed units; - Two studio units; and - Garbage chute in corridor links to residential waste storage room below. Commercial Tower - Commercial office space; - Male, female and accessible toilets; and - Façade setback (atrium) to non-typical floors.
Levels 11- 18	Residential tower - Eight 2-bed units; and - Garbage chute in corridor links to residential waste storage room below. Commercial Tower - Commercial office space; and - Male, female and accessible toilets.
Level 19	Residential tower - Six 2-bed units - One 1-bed + study unit; - One 3-bed unit; and - Garbage chute in corridor links to residential waste storage room below. Commercial Tower - Commercial office space; and - Male, female and accessible toilets.
Level 20	Residential tower - Six 2-bed units - One 1-bed + study unit; - One 3-bed unit; and - Garbage chute in corridor links to residential waste storage room below. Commercial Tower - Commercial office space; and - Male, female and accessible toilets.
Levels 21 - 28	Residential tower - Four 3-bed units - Two 2-bed units; and - Garbage chute in corridor links to residential waste storage room below. Commercial Tower - Plant room space (8m high) – Level 21
Level 29	Residential tower - Plant room space (6m high)

5.3 Key Development Statistics

The proposed development will have the following key statistics:

Table 3 – Key Development Statistics

Development Criteria	Proposed		
Building Height (storeys)	- Residential tower – 29 storeys plus plant room above; - Commercial tower – 21 storeys plus plant room above.		
Building Height (RL) *	- Residential tower – RL 199.90 (approximately 98.5m) or RL 201.40 measured to top of lift motor room. - Commercial tower – RL 197.20 (approximately 95.8m)		
Gross Floor Area (GFA)		**SREP 5 definition** (sqm)	Standard Template **definition (sqm)**
	Residential	22,910	21,494
	Commercial/Retail	24,690	23,657
	Total	47,600	45,151
FSR		SREP 5 definition (sqm)	Standard Template definition (sqm)
	Residential	5.3:1	4.97:1
	Commercial/Retail	5.71:1	5.47:1
	Total	11.01:1	10.44:1
Unit Mix	- 16 studio units (8%) - 16 one-bed units (8%) and 2 one-bed plus study units (1%) (18 one-bed units in total) - 132 two-bed units (63%) and 8 two-bed dual key units (4%) (140 two-bed units in total) - 34 three-bed units (16%) - Total – 208 units		
Average Units Sizes	- Studio – 37sqm - One-bed units (including one-bed plus study) – 63sqm to 71sqm - Two-bed units (including dual key) – 78sqm to 91sqm - Three-bed units – 99sqm to149sqm		
Car Parking	- Public parking spaces – 250 - Residential parking spaces – 192 - Commercial parking spaces – 64 - Total – 506 parking spaces		

* Note under SREP 5, height is measured to the top of the plant room. Under the Standard LEP Template height is measured to the top of the lift tower. Further discussion provided in 6.2.2. below.

5.4 Public Domain

The Project Application provides for a large area (1,294sqm excluding the southern street frontage and 1,824sqm including the southern street frontage) of public open space and provides an accessible through-site link between Thomas Street to the north through to Albert Avenue in the south. The orientation of the outdoor space will accommodate good solar access from the north and 24 hour public access to the space will be available. The proposed ground floor retail/café tenancies will address the public open space and will activate the public area.

A Landscape Plan has been prepared by Site Image (see **Appendix E**) which provides for appropriate landscaping and provision of outdoor furniture that will complement the use of the public area as a passive recreation space. In total, 133sqm of native planting and 97sqm of exotic turf species will be provided.

5.5 Capital Investment Value

A Quantity Surveyor's Statement has been prepared for the project by WT Partnership (**Appendix F**). The Capital Investment Value for the project will be $147,000,000 excluding GST and $161,700,000 including GST.

5.6 Infrastructure and Development Contributions

Welles Thomas has been in discussions with Council regarding appropriate development contributions for the project. Council has agreed that it will accept a 2% (of CIV) development contribution for the site in lieu of Section 94 contributions under Councils Section 94 Plans.

In addition, Council has agreed to allow 40 of the proposed 250 public car parking spaces to be used for the residential and retail component of the development. A contribution in lieu of these 40 spaces will be paid to Council in accordance with Council's Carparking Section 94 Contribution Plan. At July 2009, the rate for each public car parking space which will be allocated to the residential component of the development will be $26,018.62.

In addition, 4% of the residential GFA proposed (all ten units at level 3) will be dedicated to Council for affordable rental housing.

Over 1,800sqm of public open space will be provided on the site in addition to all of the above monetary and work-in-kind contributions.

A planning agreements will be prepared prior to issue of the Construction Certificate detailing the contribution framework in accordance with the above. Details are included in the Draft Statement of Commitments in Section 7.0 below.

6.0 Environmental Assessment

This Section of the report assesses and responds to the environmental impacts of the Project Application proposal. It addresses the matters for consideration set out in the DGRs. The Draft Statement of Commitments complements the findings of this section.

6.1 Director General's Environmental Assessment Requirements

Table 4 provides a detailed summary of the individual matters listed in the DGRs and identifies where each of these requirements has been addressed in this report and the accompanying technical studies.

Table 4 – Director General's Environmental Assessment Requirements

DG Requirement	Where addressed
Key Issues	
Relevant EPI's policies and Guidelines to be Addressed Planning provisions applying to the site, including permissibility and the provisions of all plans and "policies including: - Objects of the EP&A Act; - NSW State Plan, Urban Transport Statement; - Draft Inner North Sub-regional Strategy; - SEPP 53 Metropolitan Residential Development; - SEPP 55 Remediation of Land; - SEPP 65 Design Quality of Residential Flat Development; - SEPP (Building Sustainability Index: BASIX) 2004; - Sydney Regional Environmental Plan 5 – Chatswood Town Centre, relevant Development Control Plans and Local Housing Program; and - Nature and extent of any non-compliance with relevant environmental planning instruments, plans and guidelines (including the Willoughby DCP) and justification for any non-compliance.	- Section 3.1, 3.2 and 6.2 of EAR; - Tables of Compliance at Appendices I and O; - BASIX Certificate at Appendix J; and - I Design Statement at Appendix I.
Built Form The EA shall address the height, bulk and scale of the proposed development within the context of the locality and detailed envelope/ height, FSR and contextual studies should be undertaken to ensure the proposal integrates with the local environment, and that the form, layout and siting of the towers achieve optimal design and amenity outcomes. In particular, consideration should be given to the tower setbacks to the eastern (side) boundary, and the impacts upon the future development potential of adjacent land.	- Section 6.3 of EAR; - Architectural Design Statement at Appendix I; and - Comparable Height Study at Appendix K.
Urban Design/Public Domain The EA shall address the design quality with specific consideration of the façade, massing, setbacks, building articulation, materials/finishes & colours palette, landscaping, safety by design and public domain, including an assessment against the CPTED Principles. The EA shall provide the following documents: - Comparable height study to demonstrate how the proposed height relates to the height of the existing/approved developments surrounding the subject site; - View analysis to and from the site from key vantage points; and - Options for the siting and layout of building envelopes having regard to views from adjoining buildings, adequacy of separation between buildings on the site, impacts on the development potential of adjoining properties and solar access to properties to the south between the buildings.	- Section 5.3 and 6.9 of EAR; - Landscape plans and landscape report at Appendix E; - Materials and finishes plans at Appendix D; - Comparable Height Study at Appendix K; and - View Analysis at Appendix S.

DG Requirement	Where addressed
Staging The EA must include details regarding the staging of the proposed development and, in particular, staging for the construction of the public carpark. The staging documentation should include information regarding future Project Applications and the extent of works proposed for each application.	Section 6.17 of EAR.
Environmental and Residential Amenity The EA must address solar access, acoustic privacy, visual privacy, view loss and wind impacts and achieve a high level of environmental and residential amenity. Particular consideration must be given to overshadowing impacts on residential uses to the south of the site and areas of open space, including the public open space south of Ellis Street, Chatswood. In this regard, the shadow diagrams must superimpose the shadow cast by the existing buildings in Ellis Street over the proposal's shadow to demonstrate any additional impacts.	- Section 6.4, 6.13, 6.14 and 6.15 of EAR; - Shadow Diagrams at Appendix L; - Wind Report at Appendix Q; - View Analysis at Appendix S; and - Noise and Vibration Assessment at Appendix H.
Transport & Accessibility Impacts (Construction and Operational) The EA shall address the following matters: - Provide a Transport & Accessibility Impact Assessment prepared in accordance with the RTA's *Guide to Traffic Generating Developments* and making reference to the *NSW Planning Guidelines for Walking and Cycling*, considering the following issues: - Traffic generation including daily and peak traffic movements likely to be generated by the proposed development, the impact on nearby intersections and the need for funding or upgrading or road improvement works (if required). The intersections which are required to be modelled are detailed on Page 2 of the correspondence from the RTA dated 21 May 2009; - Access, loading dock(s) and service vehicle movements; - Car parking arrangements, including number of spaces; - Demonstrate that a minimalist approach to carparking provision is taken based on the accessibility of the site to public transport; - Measures to promote sustainable means of transport including public transport usage and pedestrian and bicycle linkages in addition to addressing the potential for implementing a location specific sustainable travel plan; - Demonstrate how users of the development will be able to make travel choices that support the achievement of relevant State Plan targets; - Detail the existing pedestrian and cycle movements within the vicinity of the site and determine the adequacy of the proposal to meet the likely future demand for increased pedestrian and cycle access; - Identify measures to mitigate potential impacts for pedestrians and cyclists during the construction stage of the project; and - Provide an assessment of the implications of the proposed development for non-car travel modes (including public transport, walking and cycling). - There is a joint RTA/Council Traffic Study currently being undertaken in the Chatswood CBD area investigating environs traffic options. Any recommendations from this study that may impact upon the application should be taken into consideration in the EA.	- Section 6.6 of EAR; and - Traffic and Parking Assessment at Appendix G.
Ecologically Sustainable Development (ESD) The EA shall detail how the development will incorporate ESD principles in the design, construction and ongoing operation phases of the development. The EA must demonstrate that the development can achieve a minimum 5 star NABERS rating, or any other suitably accredited rating scheme.	- Section 6.12 of EAR; and - ESD Report at Appendix M.

DG Requirement	Where addressed
Contributions The EA shall address the provision of public benefit, services and infrastructure having regard to Council's Section 94 Contribution Plan, and considering that this proposal is in excess of the development anticipated for this site, provide details of any Planning Agreement or other legally binding instrument proposed to facilitate this development.	Section 5.5 of EAR.
Consultation Undertake an appropriate and justified level of consultation in accordance with the Department's *Major Project Community Consultation Guidelines October 2007,* and provide an outline of the proposed consultation program to be adopted.	Section 4.0 of EAR.
Drainage The EA shall address drainage/flooding issues associated with the development/site, including: stormwater, drainage infrastructure and incorporation of Water Sensitive Urban Design measures.	- Section 6.11 of EAR; - Stormwater plans and report at Appendix N.
Groundwater The EA is to identify whether groundwater may be encountered during excavation, the potential need to dewater and whether there are any groundwater issues including degradation. The EA shall also address whether a licence is required under Part 5 of the Water Act 1912.	- Section 6.8 of EAR; and - Geotechnical Report at Appendix P.
Noise and Vibration Assessment The EA shall address the issue of noise and vibration impact from the railway corridor and Pacific Highway and provide detail of how this will be managed and ameliorated through the design of the building, in compliance with relevant Australian Standards and the Department's *Interim Guidelines for Development near Rail Corridors and Busy Roads.*	- Section 6.13 of EAR; and - Noise and Vibration Assessment at Appendix H.
Statement of Commitments The EA must include a draft Statement of Commitments detailing measures for environmental management, mitigation measures and monitoring for the project. The draft Statement of Commitments must also address how 250 carparking spaces will be transferred to Council ownership following completion of the development.	Section 7.0 of EAR.
Plans and Documents to accompany the Application	
The Environmental Assessment must include: - An executive summary; - A thorough site analysis including site plans, areal photographs and a description of the existing and surrounding environment; - A thorough description of the proposed development: - An assessment of the key issues specified above and a table outlining how these key issues have been addressed; - An assessment of the potential impacts of the project and a draft Statement of Commitments, outlining environmental management, mitigation and monitoring measures to be implemented to minimise any potential impacts of the project;	- Executive Summary – Page ii of EAR; - Site Analysis – Section 2.0 of EAR; - Project Description – Section 5.0 of EAR; - DGR analysis – Section 6.1 of EAR; - Impact Assessment – Section 6.0 of EAR; - Draft Statement of Commitments – Section 7.0 of EAR; - Signed statement from author – Page i of EAR; - Quantity Surveyor's Statement – Appendix F; and - Conclusion – Section 8.0 of EAR.

DG Requirement	Where addressed
- The plans and documents outlined below; - A signed statement from the author of the Environmental Assessment certifying that the information contained in the report is neither false nor misleading; - A Quantity Surveyor's Certificate of Cost to verify the capital investment value of the project (in accordance with the definition contained in the Major Projects SEPP); and - A conclusion justifying the project, taking into consideration the environmental impacts of the proposal, the suitability of the site, and whether or not the project is in the public interest.	
An existing site survey plan drawn at an appropriate scale illustrating; - the location of the land, boundary measurements, area (sq.m) and north point; - the existing levels of the land in relation to buildings and roads; - location and height of existing structures on the site; - location and height of adjacent buildings and private open space, and - all levels to be to Australian Height Datum	Appendix C
A Site Analysis Plan must be provided which identifies existing natural elements of the site (including all hazards and constraints), existing vegetation, footpath crossing levels and alignments, existing pedestrian and vehicular access points and other facilities, slope and topography, utility services, boundaries, orientation, view corridors and all structures on neighbouring properties where relevant to the application (including windows, driveways, private open space etc).	Appendix B
A locality/context plan drawn at an appropriate scale should be submitted indicating: - significant local features such as parks, community facilities and open space and heritage items; - the location and uses of existing buildings, shopping and employment areas; and - traffic and road patterns, pedestrian routes and public transport nodes.	Appendix B
Architectural drawings at an appropriate scale illustrating: - the location of any existing building envelopes or structures on the land in relation to the boundaries of the land and any development on adjoining land; - detailed floor plans, sections and elevations of the proposed buildings; - elevation plans providing details of external building materials and colours proposed; - fenestrations, balconies and other features; - accessibility requirements of the Building Code of Australia and the Disability Discrimination Act; - the height (AHD) of the proposed development in relation to the land; - the level of the lowest floor, the level of any unbuilt area and the level of the ground; and - any changes that will be made to the level of the land by excavation, filling or otherwise.	Appendix D
Stormwater Concept Plan – illustrating the concept for stormwater management.	Appendix N
Landscape/Public Domain Concept plan – illustrating treatment of open space/public domain areas, screen planting along common boundaries and tree protection measures both on and off the site.	Appendix E
Shadow diagrams showing solar access to the site and adjacent properties at summer solstice (Dec 21), winter solstice (June 21) and the equinox (March 21 and September 21) at 9.00 am, 12.00 midday and 3.00 pm.	Appendix L

DG Requirement	Where addressed
View Analysis – Visual aids such as a photomontage must be used to demonstrate visual impacts of the proposed building envelopes in particular having regard to the siting, bulk and scale relationships from key areas.	Appendix S
A massing model of the proposed development for the entire site (i.e. Concept Plan).	Submitted separately

6.2 Compliance with Relevant Planning Controls

The proposal's compliance with relevant EPIs and DCP is assessed in **Table 5** below. Although strict compliance with local planning controls is not required for Part 3A project, the proposal has been assessed against the WLEP and WDCP to demonstrate the proposal's consistency with the local context.

Table 5 – Compliance with relevant SEPPs

SEPP	Provision
EP&A Act	The proposed development will be consistent with the objectives in Section 5(a) of EP&A Act. The proposed development will: (i) support the proper management and development of urban land by continuing to provide public car parking, as well as a range of commercial, retail and residential uses in close proximity to public transport)t, (ii) promote and co-ordinate the orderly and economic use and development of land by maximising the development potential of this currently-underutilised site, (iv) provide a large area of open space for public use, (vii) implement measures to achieve a high level of ecologically sustainable development, and (viii) provide 10% of the residential GFA in the development as of affordable housing.
SEPP 55	The site has been under Council ownership for a number of years and the know history of uses on the site is limited to a public car park. In addition, the site is located within an established commercial/residential part of Chatswood which does not have a history of industrial or contaminating uses. The presence of contamination on the site is highly unlikely.
SEPP Infrastructure	The RTA provided comments which were incorporated into the DGRs for the Project Application. These comments have been considered in the preparation of the EAR and Traffic and Parking Assessment (Appendix G). It is expected that the EAR will be referred to the RTA for comment. Any comments made by the RTA will be considered in the preparation of a preferred project report (PPR) if required. In accordance with SEPP Infrastructure, a Noise and Vibration Assessment (Appendix H) has been prepared for the proposal which addresses potential acoustic impacts from the rail corridor and Pacific Highway on the residential component of the development.
SEPP 65	A SEPP 65 Design Statement prepared by PTW Architects in included at Appendix I which demonstrates how the residential component of the project will achieve consistency with the ten design principles in SEPP 65. In addition, a table of compliance assessing the proposed residential component of the development against the Rules-of-Thumb in the RFDC is provided at Appendix I.
SEPP BASIX	A BASIX certificate is included at Appendix J which demonstrates how the residential component of the proposed development will achieve the water and energy saving targets required by SEPP BASIX.
SREP 5	
Zone Objectives	The proposed development will be consistent with the zone objectives for the 3(c2) – Business Commercial zone as it will provide a range of residential, commercial and retail uses on the site.

SEPP	Provision
Permissible uses	Residential flat buildings are permissible within the zone. A limited range of retail uses are also permitted on the site (as listed in Schedule 3 and 7 of SREP 5). Future DAs for occupation and fitout of the proposed retail tenancies will address these requirements. Commercial premises, other than car parking stations, are permissible development on the site. However, Clause 34 of SREP 5 provides that 200 public car parking spaces are to be provided on the site. Council has advised that this site-specific requirement has the effect of making car parking stations a permissible use on the site.
Retail trading in Zone 3(c2)	The uses specified in Schedule 3 include the following: - Bakery - Chemist's shop - Confectionery shop and milk bar - Delicatessen - Fish and chip shop - Fruit and vegetable shop - Grocery and health food shop - Newsagent's shop - Stationery shop (books and newspapers) - Sandwich shop - Take-away food (other than drive-in) - Tobacconist The size of retail tenancies in the proposed development varies from 60sqm to 600sqm. As detailed above, individual DAs will need to be lodged in the future for fitout and occupation of the proposed retail tenancies at which time Council will have the opportunity to assess whether any of the retail premises (that exceed 150sqm) will involve any of the uses listed in Schedule 3. The retail component of development makes up approximately 5% of the total GFA proposed and is well be low the maximum of 20% that is permitted for uses listed in Schedule 3.
Maximum Floor Space Ratio (FSR)	The proposal does not comply with the maximum FSR control which applies under SREP 5 (maximum of 5.5:1). However, it will comply with the maximum permissible FSR proposed for the site under the Draft Willoughby LEP. Further discussion is provided in Section 6.2.1 below.
Maximum Height	The residential tower located in the northern portion of the site will have a height of RL 199.90 (RL 201.40 to top of lift motor room), approximately 49.9m above the permissible height control in SREP 5 (RL 150) for the part of the site. The commercial tower located in the southern portion of the site will have a height of RL 197.20, approximately 67.2m above the permissible height control (RL 130) in that part of the site. Further discussion is provided in Section 6.2.2 below.
Development in the Vicinity of a Heritage item	The proposal is not expected to have any unacceptable impact on the nearby heritage building (Former Fire Station at 767 Pacific Highway) as the proposed commercial tower is located more than 20 metres from this heritage item.
Restricted vehicular access from Albert Avenue	Vehicle access to the proposed development will be provided from Albert Avenue consistent with the existing vehicle access to the southern car park on the site. As through access from Fleet Lane to Thomas Street there are limited alternative options for providing vehicle access from the Thomas Street frontage. The provision of a vehicle access at the Thomas Street frontage (together with the right-of-way) would result in approximately half of the street frontage being dedicated to car access and would have an adverse impact on the pedestrian environment.
Provision of car parking on site	- 250 public car parking spaces are proposed to be provided on the site (which exceeds the minimum of 200 required by the LEP). As detailed in Section 5.5 above, 40 of the 250 car parking spaces (required as part of the contract for sale) will be utilised for the residential/retail component of the development and a contribution in lieu of these spaces will be paid as part of the Planning Agreement. - Even with 40 of the public spaces allocated to the residential/retail component of the development, the proposal will still provide public parking spaces in excess of the 200 spaces required under SREP 5.

SEPP	Provision
WLEP	
Height	Discussed above in relation to SREP 5 and in Section 6.2.2 below.
Willoughby Local Housing	All units at level 3 of the proposed development, equivalent to 823sqm of GFA (4% of the total residential GFA proposed on the site) will be dedicated to Council as affordable rental housing stock.
WDCP	
Part C3 –Sustainability Principle	An ESD report has been prepared for the project (Appendix M) which addresses the requirements of Part C3 of the WDCP.
Part C4 – Transport Requirements for Development	The proposal will provide on-site parking below the rate specified in the WDCP. However, the reduced number of spaces is considered appropriate given the site's proximity to public transport facilities. Further detail is provided in Section 6.6 below.
C5 – Water Management	Stormwater plans and report are included at Appendix N which have considered the requirements of the WDCP in relation to water management on the site.
C6 – Access, Mobility and Adaptability	The proposed development will generally comply with the accessibility requirements in the WDCP. Commitments to achieve access within the commercial/retail component of the development and provision of accessible parking are provided in the Draft Statement of Commitments in Section 7.0. In addition, a commitment to provide 10% of the units as adaptable units is provided consistent with the standard requirements for new RFB.
C8 – Waste Management	Separate waste storage areas for the commercial/retail and residential components of the proposed development area provided in the basement area, and garbage chutes are available at each residential level of the proposed residential tower. Garbage collection will take place at Basement level 1 with garbage trucks parking within the designated loading areas. A commitment to submit waste management plans for the proposed development prior to the construction certificate being issued has been included in the Draft Statement of Commitments at Section 7.0.
C11 – Safety by Design	The proposal's compliance with the principles of Crime Prevention Through Environmental Design is discussed in Section 6.16 below. The proposed development will provide a safe and secure environment in accordance with the objectives of Part C11 of the WDCP.
C14 – Development near a Rail Corridor	A Noise and Vibration Assessment (Appendix H) has been prepared for the proposal which addresses the noise and vibration impacts of the nearby rail corridor. See Section 6.13 below for details.
C15 – Undergrounding of services	All services for the new mixed use development will be located below ground.
Part D3 - Multi-Unit Housing and Mixed Use/Commercial Residential Development	The proposed development is generally compliant with the controls for mixed use development and multi-unit housing. The majority of these controls apply to development within the residential zones prescribed under WLEP and are not directly applicable to the proposal.
Part E – Commercial Development	The proposed commercial component of the development is generally consistent with the intent and objectives for the controls for commercial development. The majority of the controls relate to lower-density commercial uses in areas zoned under the WLEP and are not directly applicable to the proposed development.
Part I17 – Controls for Specific Site (Civic Place	The proposed development has been designed to achieve general consistency with the site-specific development controls in this section of the WDCP. A detailed assessment of the proposal's compliance with relevant provisions in Section I17 of the WDCP is provided in Appendix O.

6.2.1 Floor Space Ratio

An existing FSR of 5.5:1 applies to the site, of which a maximum of 2.5:1 can be residential GFA and a maximum of 3:1 can be commercial GFA.

SREP 5 references the now-repealed *Environmental Planning and Assessment Act Model Provisions 1980* (Model Provisions) and defines GFA as:

> *the sum of the areas of each floor of a building where the area of each floor is taken to be the area within the outer face of the external enclosing walls as measured at a height of 1 400 millimetres above each floor level excluding:*
>
> *(i) columns, fin walls, sun control devices and any elements, projections or works outside the general line of the outer face of the external wall,*
>
> *(ii) lift towers, cooling towers, machinery and plant rooms and ancillary storage space and vertical air-conditioning ducts,*
>
> *(iii) car-parking needed to meet any requirements of the council and any internal access thereto,*
>
> *(iv) space for the loading and unloading of goods.*

In accordance with this definition, 22,910sqm of residential GFA (equivalent to a FSR of 5.3:1) and 24,690sqm of commercial/retail GFA (equivalent to a FSR of 5.71:1) is proposed. In total, 47,600sqm of GFA (equivalent to a FSR of 11.01:1) is proposed on the site when calculated in accordance with the definition for GFA under SREP 5.

However, as detailed in the report to Council on 24 August 2009 (referenced in Section 1.1 above) Council is proposing to apply a permissible FSR of 10.5:1 under its Draft LEP drafted in accordance with the Standard LEP Template. In addition, as detailed in Council's letter of 4 August 2009, Council has indicated that it will accept a floor space mix on the site of 5.5:1 commercial GFA and 5:1 residential GFA with a maximum FSR of 10.5:1 on the site consistent with the future FSR control for the site under the Draft Willoughby LEP.

Under the Draft Willoughby LEP, GFA will be calculated in accordance with the definition under the Standard LEP template as follows:

> *gross floor area means the sum of the floor area of each floor of a building measured from the internal face of external walls, or from the internal face of walls separating the building from any other building, measured at a height of 1.4 metres above the floor, and includes:*
>
> *(a) the area of a mezzanine, and*
>
> *(b) habitable rooms in a basement or an attic, and*
>
> *(c) any shop, auditorium, cinema, and the like, in a basement or attic, but excludes:*
>
> *(d) any area for common vertical circulation, such as lifts and stairs, and*
>
> *(e) any basement:*
>
> *(i) storage, and*
>
> *(ii) vehicular access, loading areas, garbage and services, and*
>
> *(f) plant rooms, lift towers and other areas used exclusively for mechanical services or ducting, and*
>
> *(g) car parking to meet any requirements of the consent authority (including access to that car parking), and*
>
> *(h) any space used for the loading or unloading of goods (including access to it), and*

(i) terraces and balconies with outer walls less than 1.4 metres high, and

(j) voids above a floor at the level of a storey or storey above.

In accordance with the above definition, 21,494sqm of residential GFA (equivalent to a FSR of 4.97:1) and 23,657sqm of commercial/retail GFA (equivalent to a FSR of 5.47:1) is proposed. In total, 45,151sqm of GFA (equivalent to a FSR of 10.44:1) is proposed on the site when calculated in accordance with the definition for GFA under the proposed planning framework for the Willoughby LGA.

It is appropriate to calculate the FSR for the site in accordance with the Standard LEP Template/Draft Willoughby LEP as this will be the key EPI applicable to the site in the future and the EPI under which surrounding sites will be developed. In addition, it is the future Draft Willoughby LEP which permits a development with a FSR of 10.5:1 on the site which Council has indicated will be acceptable.

6.2.2 Building Height

Building height is defined in SREP as:

the distance measured vertically from any point on the building (not being a vent, chimney, lift tower or other service installation) to the ground level immediately below that point.

Building height under the Standard LEP Template is defined as:

the vertical distance between ground level (existing) at any point to the highest point of the building, including plant and lift overruns, but excluding communication devices, antennae, satellite dishes, masts, flagpoles, chimneys, flues and the like.

The primary difference between the two definitions (in relation to the proposed development) is that under the Standard LEP Template, lift towers and overruns are included in the definition for building height.

The residential tower located in the northern portion of the site will have a height of RL 199.90 (approximately 98.5m) which will be approximately 49.9m above the permissible height control in SREP 5 (RL 150). When calculated in accordance with the Standard LEP Template the proposed residential tower will have a height of RL 201.40 equivalent to an approximate height of approximately 100m. As detailed in Council's letter of 24 August 2009, a building height of 110m (equivalent to 33 storeys) is considered appropriate for the residential tower. Thus the proposed development (calculated under both the SREP 5 and Standard LEP Template) will be below Council's recommended height limit.

The commercial tower located in the southern portion of the site will have a height of RL 197.20 (approximately 95.5m) which will be approximately 67.2m above the permissible height control (RL 130). However, as detailed in Council's letter of 24 August 2009, a building height of approximately 100m (equivalent to 25 storeys) is considered appropriate for the commercial tower. Thus the proposed development will be below Council's recommended height limit for the commercial tower.

A comparative height study is provided at **Appendix K** which considers how the proposed residential and commercial towers relate to the Chatswood skyline. Notably the proposed development will be lower than the Chatswood Rail Interchange (CRI) Towers over the Chatswood Railway Station for which approval has already been granted. As detailed in the south elevation height study, the tall mixed use towers to the north, north-west and north-east provide a height backdrop to the proposed development site which will ensure that the height of the proposed new towers does not contrast against the established Chatswood CBD skyline particularly when viewed from the Pacific Highway and the residential area to the south.

In addition, as shown in the west elevation, the proposed new towers will provide a 'bookend' between the residential portion of Chatswood to the south and the Chatswood commercial CBD to the north. The proposed new towers will also 'soften' the impact of the taller CTI towers (once built) on the residential area to the south by providing a transition down to the area on the southern side of Albert Avenue.

Shadow diagrams are also included at **Appendix L** which compares the proposed overshadowing impact of the proposal against the existing overshadowing resulting from surrounding development. Further discussion is provided in Section 6.3 and 6.4 below

6.3 Built Form and Context

The proposed development has been designed to orientate the commercial tower to the north to provide good solar access to the residential units. The narrow footprint of this building also preserves solar access to the public plaza/through site link which is orientated in a north-south direction. The proposed through-site access will provide an important pedestrian link from the Chatswood CBD and Chatswood Transport Interchange to the residential precinct to the south and will be activated through retail uses at the ground floor which address the public open space.

A comparable height study is included at **Appendix K** which demonstrates that the proposed towers will not be significantly taller than existing development surrounding the site and will be lower than height then the approved CRI Towers to the north-east of the site.

The DGRs requested that consideration be given to the provision of appropriate tower setbacks to the eastern boundary of the site in relation to the future development potential of adjacent land. Council has requested that a vehicle access be provided from Fleet Lane to Thomas Street via a right-of-way at the eastern boundary of the site. The provision of this right of way ensures that a ground floor setback of some 6m is provided between the proposed residential tower and site to the east. From level 2 upwards the proposed residential tower will extend approximately 2.5m into this setback area. The proposed setback at this boundary is considered suitable as it will ensure that the site to the east can be developed. Shifting the residential tower further to the west would reduce the size of the public plaza and is not considered appropriate.

6.4 Solar Access & Overshadowing

As demonstrated in the attached shadow diagrams at **Appendix L**, the residential building to the south of the site are already overshadowed by 3pm in mid winter. The impact of the proposed new development on the Thomas Street car park site will result in these building being overshadowed at 12pm in mid winter. However, solar access to the buildings to the south will still be available during the morning hours in mid winter. Late afternoon solar access will also be available to these residential units as the shadow from the proposed development moves to the west). Thus, during the times most residents will be at home (ie early morning and later afternoon) residents will continue to receive good solar access.

In addition, at equinox only some of the buildings to the south of the site will be overshadowed at 3pm with the majority of buildings having full sun access from morning to midday. During summer, full solar access between 9am and 3pm is available to these buildings. Thus for most of the year residences to the south of the site will continue to enjoy almost full solar access and will receive morning sunlight in mid winter.

In addition, the proposed development will not substantially worsen the existing shadow impact on public open space areas to the south of the site (above the existing overshadowing from surrounding buildings) at 3pm in mid winter, and will continue to maintain almost full solar access to this open space from 9am to midday in midwinter. Shadow diagrams at half hour intervals between 12pm and 3pm have been prepared to show the midwinter solar access.

The Chatswood Croquet and Tennis Centre, as well as the Chatswood Bowling Club lie to the south of the site on the southern side of Ellis Street. As shown in the diagrams, the Tennis Croquet centre is already overshadowed at midday by a residential building to the north. The proposed development will not alter existing overshadowing on the Centre until 1:30pm in midwinter and will only affect the Centre until 3pm. The Centre will continue to receive good solar access in the morning. In addition, the Chatswood Bowling Club, which is located further to the south, will barely be affected by the shadow from the new development in midwinter.

The shadow diagrams also demonstrate that the shadows from the proposed development will only hit the Chatswood Oval at 2pm in midwinter. Thus the oval will retain good solar access from most of the day. Furthermore, the articulation of the development into two towers means that the shadow cast over the Oval in the afternoon will be broken up.

6.5 Site Suitability and Implications of Proposed Land Uses

The proposed site is located at the southern edge of the Chatswood Commercial Precinct and provides a transition to the residential area to the south. It is also in close proximity to the Chatswood rail interchange and Retail Precinct. The site is therefore well suited to a mix of uses including retail, commercial and residential.

The provision of 208 high-quality residential units (10 of which will be provided as affordable housing units) in close proximity to public transport and existing services and retail premises is consistent with State Government objectives to locate high density residential development in locations with good access to public transport and services. In addition, the provision of some 19,000sqm net floor area (NFA) of A-Grade office space promotes the continued expansion of Chatswood CBD as an employment and economic centre. The site's excellent access to public transport will support the increase in worker population on the site.

Ground floor and level 1 retail premises will be provided on the site within the range of appropriate uses identified in Schedule 3 and 7 of SREP 5. The ground floor café uses in particular will activate the public plaza/through site link. In addition, the continued provision of over 200 public parking spaces on the site will support the existing businesses within the Chatswood CBD by providing casual parking for visitors to the area.

6.6 Traffic, Parking and Access

A Traffic and Parking Assessment has been prepared for the project (**Appendix G**) which assesses the traffic, parking and vehicle access implications of the project.

Car Parking

The application of the car parking rates under the WDCP would require the following car parking provision on the site:

- Residential Apartments
  - 16 studio units – 8 spaces
  - 18 one-bedroom units – 18 spaces
  - 140 two-bedroom units – 140 spaces
  - 34 three-bedroom units – 43 spaces
  - Visitors – 52 spaces
  - Total residential spaces required – **261 spaces**
- Commercial Office
  - 19,092sqm NFA – 174 spaces (notably, in Council's letter of 24 August 2009, it indicated that a commercial car parking rate of 1/200sqm would be considered, similar to the rate used for the Pacific Place (Mirvac) office component which would reduce the commercial car parking requirement to 96 spaces)
- Retail Space
  - 2,031sqm NFA – 82 spaces

  Total number of parking spaces required – **506 spaces** (or 428 with reduced commercial car parking rate).

  In addition, 250 public car parking spaces are required.

A total of 506 car parking spaces are proposed on the site allocated as follows:

- Residential Apartments
  - 14 studio units @ 0.5 spaces per unit – 7 spaces
  - 184 one-bed, two-bed and three-bed units (excluding the 10 affordable housing units) @ 1 space per units – 184 spaces
  - Manager-caretaker unit – 1 space
  - Total residential space proposed – **192 spaces**
- Commercial/Retail – **64 spaces**
- Public – **250** spaces of which **40** will be allocated as residential visitor and retail component of the development subject to appropriate contributions being made to Council.

Although the provision of parking on the site is below the rates specified in the WDCP, the provision of a restricted number of parking spaces on the site is consistent with the DGRs which recommend a constrained number of spaces be provided. In addition, the car parking arrangements proposed respond to the site's strategic location in proximity to frequent and well-connected public transport services.

The allocation of 40 of the proposed public car parking spaces to the residential and retail component of the development (by way of appropriate developer contributions to Council) will further reduce the car parking shortfall. It is also proposed that no parking spaces be provided for the affordable housing component of the development given the site's proximity to public transport, services, retail premises and recreational space.

The DGRs place significant emphasis on constraining the parking provision and traffic generation outcome of the proposed development. The Traffic and Parking Assessment concludes that the proposed constrained provision on parking will assist in reducing the traffic generation of the development and encouraging the use of the excellent public transport services available whilst maintaining a suitable and acceptable provision of on-site parking.

Access and Traffic Impacts

The proposal's impacts on traffic and access are addressed in the Traffic and Parking Assessment which considered the recommendations and results of the Council/RTA Traffic Study for the Chatswood CBD (prepared by GHD), as well the comments made in the RTA letter of 21 May 2009 in relation to the DGRs for the proposal.

Vehicle access to the basement car park will be provided from a left-in/left out access off Albert Avenue. The Traffic and Parking Assessment notes that this access is located where there are excellent sight distances available and will accommodate all vehicles requiring access to the car park including 9.5 metre refuse trucks.

The Traffic and Parking Assessment estimates the traffic generation rates for the public car parking on the site based on the existing AM and PM peaks for the existing Thomas Street car park, as well as surveys of other car parking stations in CBD environments. Projected traffic generation rates for the residential component of the development are based on the RTA Guidelines for Traffic Generating Development, and rates for the commercial component area based on surveys of other commercial office buildings with constrained parking provision.

The total traffic generation of the proposed development is comparable to that assessed for the site in the Council/RTA Traffic Study for the Chatswood CBD.

According to the Traffic and Parking Assessment the proposal will result in additional traffic movements at the intersection of Albert Avenue and Pacific Highway in the order of 1 – 2 vehicle trips per two cycles of traffic signals in the morning and afternoon peak, which will be imperceptible.

The Traffic and Parking Assessment has considered the impacts of the proposed development on the performance of key intersections in the vicinity of the site. The majority of the intersections that were requested by the RTA to be considered (in its submission on the PEAR of 21 May 2009) have been addressed.

As the traffic generation for the development site will be consistent with the traffic generation envisaged in the Council/RTA Traffic Study for the Chatswood CBD, it is not considered necessary to address all of the intersections requested in the RTA letter. Further detail is provided in Section 9 of the Traffic and Parking Assessment.

Internal Circulation

The internal basement car parking circulation will adopt a flexible two-way system with resident, visitor and commercial car parking located in separate basement areas to the public and retail parking. The layout of the basement areas will comply with the design requirements of AS 2890.1 particularly in relation to ramps, aisles, bays and manoeuvring areas.

Operation of Public Car Park

The public parking will be operated as a public parking station with 'central pay' provisions. A parking management will be prepared for the public car park prior to issue of the construction certificate. This has been included in the Draft Statement of Commitment in Section 7.0 below.

Servicing

Provision will be made in the loading docks for two MV's (8.8 metres) and two vans as well as access provision for a 9.5 metre refuse vehicle and three designated courier spaces. According to the Traffic and Parking Assessment the provision of loading area will be suitable for the servicing requirements of the proposed development while any occasional requirement for a large truck to service the site will be accommodated by available kerbspace in Albert Avenue.

Pedestrians and Cyclists

The proposed development incorporates a generous and amenable through-site link for pedestrians and cyclists, as well a substantial pedestrian plaza area. Provision of bicycle parking and female and male changes rooms will support bicycle use.

Cyclist access will also be facilitated by the recently constructed access facilities along Thomas Lane including the 'shared footway' along Albert Avenue and the signal controls crossing off Albert Avenue at the intersection with Thomas Lane to the east of the site. Upgraded footways along Albert Avenue and Thomas Street will provide an improved pedestrian environment along the street frontage to the site and complement the pedestrian through-site link.

Pedestrian/cyclist movements along Albert Avenue and Thomas Street frontage footways will be maintained with 'B Class' hoarding protection during the construction process. There will not be any through-site link provision during construction, however the nearby Thomas Lane pedestrian/cyclist corridor will be available.

Public Transport

The Chatswood CBD has excellent public transport services including heavy rail and buses. The availability of frequent and accessible public transport services in close proximity to the development will encourage public transport use by residents and workers of the proposed developed which is supported by the constrained number of parking spaces on the site (particularly for the commercial/retail component of the development), as well as the facilitation of pedestrian and cyclist access to and around the site.

6.7 Social and Economic Issues

The proposed development will provide a range of retail, commercial and residential uses within close proximity to public transport and existing services. The provision of some 24,000sqm of commercial and retail floor GFA on the site will result in a significant increase in economic activity and generate substantial employment in the Chatswood CBD. In addition, the proposed 208 units will result in a substantial increase in the resident population in the Chatswood CBD. Residents are likely to support local business, services and retail premises in the Chatswood CBD thereby encouraging increased economic activity. The provision of 4% of the residential GFA on the site as affordable housing will have positive social implications and will encourage diversity within the Chatswood area. Furthermore, the provision of over 1,800sqm of publicly-accessible open space will contribute to the availability of passive recreation space for the Chatswood resident and worker population.

6.8 Geotechnical

A Geotechnical Report is included at **Appendix P**. Borehole testing has been carried out on the site which indicates that the site has a subsurface soil profile of surficial pavements and fill overlaying residual silty clays over shale and sandstone.

The groundwater level on the site was measured at approximately the mid basement level. The Geotechnical Report concludes that given the expected low permeability of the subsurface soil profile on the site, construction of a drained basement design would be feasible and appropriate. Groundwater seepage into the basement would be expected to reduce as the excavation progresses, and the surrounding profile is drained of water. Although locally higher inflows could be expected through open joints or bedding planes during heavy rainfall, this is not expected to cause an adverse effect.

The report concludes that long-term groundwater flows would be expected to be of limited volumes and would be able to be controlled by draining to a sump at the lowest basement level for pumped disposal to the stormwater system (included in the Draft Statement of Commitments).

A licence under Part 5 of the *Water Act 1912* is typically required by a consent authority when constant dewatering is highly probable. This is unlikely to be required for the proposed development as the subsurface soil profile has low permeability and groundwater flows will be limited in volume.

The Geotechnical Report concludes that the proposed development will not have a significant effect on regional groundwater flows.

6.9 Urban Design and Public Domain

In preparing an appropriate treatment of the pedestrian through-site link and public plaza, a Landscape Design Analysis was undertaken by Site Image (see Landscape Report at **Appendix E**). The following key considerations were taken into account:

- Microclimate and physical environment analysis
- Spatial and functional analysis
- Visual analysis

Design analysis has considered the orientation of the space to sun and wind, and the character and context of the space relative to the Chatswood CBD and adjoining area. The site will complete a significant missing piece of this area of Chatswood to create a lively, dynamic civic space activated by the residential and commercial population of the site and from the adjacent areas. The following additional considerations were taken into account in the design of the public space:

- Streetscape identity and relationship as part of the CBD and residential environs;
- Sun and shade patterns and influence on characters and appropriate use of the space;
- Wind characteristics and potential to ameliorate this to the benefit of the possible use of the space;
- Lighting, security monitoring and general design for safety and comfort, and ensuring it is suitably comfortable, welcoming hospitable space generally suitable for purpose;
- Accessibility and links to other site, railway and CBD area and nearby open space;
- Pedestrian and vehicular sightlines for arrival and identity and issues associated with retail and commercial building signage.

In response, the following design elements have been incorporated into the design of the public space (see Landscape Plans at **Appendix E**):

- Landscape screening of the blank wall of the existing two-storey building adjoining the north-western boundary of the site;
- Provision of a broad lawn for passive recreation with appropriate setting and wall edging;
- Upgrading of Fleet Lane Junction with the site along the southern boundary with a café terrace with good sunlight access and use of landscaping devices to separate the vehicle from pedestrian areas;
- Formal paving to mark the entry to the commercial forecourt integrating with the broader pattern of the plaza paving;
- Appropriate paving to mark the entry to the minor forecourt to the residential building extending to the open lawn area;
- Broad pedestrian stair to Albert Avenue to mark the southern entry to through-site link and adjoining accessible ramp to provide equitable access;
- Repaving to the Thomas Street and Albert Avenue Council footpath and appropriate street tree planting consistent with Council requirements (included as a Commitment in the Draft Statement of Commitments at Section 7.0).
- Sculptural paving inlay and flush lights to emphasise the linear element along the length of the public through-site link;
- Broad canopy trees planted in selected locations;
- Public art/sculpture to provide a focal point to the public space; and
- Paving material consistent with Council's footpath paving.

Flush lighting is proposed in the public area to minimise light pollution in accordance with the recommendation of the ESD report (**Appendix M**). The design of the public domain has considered the site characteristics, setting, functions of the building and context within the CBD. The proposal will provide good connectivity with the adjacent streetscape and other nearby public spaces and has been designed in line with Council's relevant codes and guidelines for urban design, public domain and landscaping.

A Plan of Management for the public plaza and through-site link will be prepared prior to the Construction Certificate stage to ensure that the publicly-accessible space is managed and maintained once the development is complete.

6.10 Wind Impact

A Pedestrian Wind Environment Statement has been prepared for the proposal and is included at **Appendix Q** which considers the wind impacts of the proposed development on the wind environmental within and around the site.

North-Easterly Winds

The Statement concludes that north-easterly winds may create unfavourable wind conditions where café style outdoor seating at the northern entrance to the site.

Southerly Winds

In relation to southerly winds, the Statement concludes that combination of the neighbouring buildings on the southern side of Albert Avenue, the proposed awning on the southern aspect of the office building, and the glass canopy between the office building and the residential building will mitigate the potential ground-level funnelling of southerly winds between the two buildings, resulting in wind conditions at the southern half of the ground floor public through-site link being suitable for the proposed use. However, the northern end of the ground floor through-site link may be adversely affected by southerly winds which have been funnelled between the two buildings or re-directed by the glass canopy. Strategic wind amelioration devices will be incorporated to ensure this area is suitable for its intended use.

Westerly Winds

Wind conditions at the western café seating area are expected to be suitable for their intended uses due to adequate shielding of the area by proposed vegetation screening. The ground floor public walkway may be impacted by westerly winds down washing from the residential building.

Recommendations

The Pedestrian Wind Environment Statement recommends the following mitigation measures to ensure that wind impacts are ameliorated and that an appropriate level of pedestrian amenity is maintained:

- Retention of Level 1 awning on the western face of the residential building Extension of this awning to the northern face of the residential building.
- Retention of Level 1 awnings on Level 1 of the office building.
- Retention of the proposed glass canopy between the office and residential buildings
- Addition of balustrades and awnings to the Level 2 balconies of the residential tower.
- Addition of balustrades to the northern corner balconies of the residential tower and retention of the blade wall between the balconies on the southern face of the residential building.
- Retention of current planting scheme (see Landscape Plan at **Appendix E**), with the addition of strategic ground level planting of trees and/or shrubs along the public walkway and close to the northern and southern entrances.

  OR

- Retention of a planting scheme similar to that currently proposed (see Landscape Plan at **Appendix E**), and extension of the awnings located on the western and northern aspects of the residential building.

These recommendations have been included in the Draft Statement of Commitments at Section 7.0.

6.11 Drainage and Water Quality

Stormwater plans and a stormwater report are included at **Appendix N**. The stormwater plans provide details of on-site water detention and water re-use on the site consistent with the WDCP. In addition, the stormwater report describes the Water Sensitive Urban Design measures that have been incorporated into the proposed development to improve water quality and encourage water re-use.

These include the following measures:

- On-site detention has been integrated within the development in accordance with Willoughby Council's requirements.
- Rainwater reuse has been integrated within the development, to further minimise the outflow characteristics.
- Rainwater reclamation is being utilized for landscape watering, swimming pool make-up / balancing and water closet flushing for basement sanitary fixtures.
- The use of Wels rated water closet cisterns will be used to minimise flush water usage in accordance with the ESD Report.
- Wels rated tapware will be used to minimize potable water usage in accordance with the ESD Report.
- The use of Wels rated water closet cisterns will be used to minimise wastewater generation in accordance with the ESD Report.
- Wels rated tapware will be used to minimize wastewater generation in accordance with the ESD Report
- The inflow of collected rainwater and stormwater, into the rainwater collection and on-site detention chambers will pass through gross pollutant interception chambers to reduce the gross pollutants within the systems, and increase the quality of discharge from the site's catchment area.

6.12 Ecologically Sustainable Development

The proposed development will incorporate a significant number of initiatives in relation to ESD including the following:

- The residential component of the building shall be designed to comply with Building Code of Australia (BCA) and BASIX requirements.
- The retail component external facade shall be designed to comply with deemed to satisfy provisions of Section J of the BCA.
- A 5 star NABERS rating is targeted for the commercial office space in the proposed commercial tower.
- The building construction shall include materials that have excellent thermal properties to ensure that the air conditioning plant capacity energy consumption is minimised.
- Intelligent design and material selection will ensure that thermal comfort is not achieved entirely by a mechanical means. Passive design initiatives such as performance glazing, shading and insulation will reduce demand on the mechanical air conditioning systems which will reduce energy consumption and greenhouse gas emissions.

The ESD report at **Appendix M** details the proposed ESD initiatives in the following areas:

- Atmosphere – includes natural ventilation of some units and provision of cyclist facilities.
- Energy/Greenhouse Gas Abatement – includes installations of energy efficient lighting and fixtures, compliance with BASIX (for residential component) and with Section J of the BCA (commercial component), and provision of a design that accommodates good solar access to most units.
- Indoor environmental quality and thermal comfort – includes daylight access to at least 60% of the net useable commercial area and compliance with the BASIX Thermal Comfort requirements for residential units.
- Building Materials – includes low volatile organic compounds (VOC) flooring and interior paints.
- Waste – includes a minimum 60% of recycling of construction waste and provision of basement area for storage of recycling waste, as well as a storage area for recycling garbage on every residential floor.
- Water conservation – includes drip feed irrigation of landscaped area and provision of a rainwater tank for basement and common area toilet flushing, filling of pool and landscape irrigation.
- Noise – includes selection of acoustically treated mechanical plant and locating in less noise sensitive areas.
- Management – provision of an owners corporation manual prior to occupation which will include ESD initiatives for the development.

All of the ESD initiatives itemised in the ESD Report are included in the Draft Statement of Commitment in Section 7.0.

6.13 Noise & Vibration

A Traffic and Railway Noise and Vibration Assessment (Noise and Vibration Assessment) is included at **Appendix H** which addresses the following potential noise and vibration impacts:

- Potential impact associated with the traffic movements generated by the development and other noise emitted by the proposed development on surrounding receivers;
- Potential impacts associated with noise generated from the Pacific Highway and surrounding local streets; and
- Potential impact associated with noise and vibration generated from the North Shore Railway corridor.

In accordance with the DGRs the proposal's compliance with the noise criteria set out in the relevant Australian Standards and *Department's Interim Guidelines for Development near Rail Corridors and Busy Roads* have been considered.

In addition, the Noise and Vibration Assessment addresses the internal noise criteria for residential development in proximity to a rail corridor and busy road.

To achieve appropriate internal noise levels the Noise and Vibration Assessment recommends medium to heavy weight single glazing with acoustic seals for all bedroom windows and light to medium weight single glazing with acoustic seals for all living room windows. Glazing recommended for the commercial component of the development are 6mm glass either side of a 12mm air gap.

The Noise and Vibration Assessment notes that required internal noise levels cannot be achieved with windows open and therefore recommends that air conditioning be installed in accordance with AS 1668.2.

The report also recommends that any mechanical ventilation system be acoustically designed so that acoustic performance of the recommended constructions are not reduced by any duct or pipe penetrating the wall/ ceiling/roof and that any ventilation system comply with the Department of Environmental Climate Change and Water noise emission guidelines.

The above recommendations have been included in the Draft Statement of Commitments at Section 7.0.

The Noise and Vibration Assessment has considered the traffic noise likely to be generated by the development and concludes that there will be no perceptible increase in noise from the predicted increase in traffic flows around the site. In addition, the investigation of impacts of rail vibration concluded that even if train frequency increased by 10%, there would be no impact on the proposed development. The report also concludes that internal structure borne noise levels will comply with relevant requirements without treatment. A structural report is included at **Appendix R** which details the proposed structural arrangements for the development.

6.14 View Impacts

As detailed in Section 2.6 above, the site is not clearly visible from the north, from Pacific Highway or Victoria Avenue, due to the cluster of high rise buildings which include the Vodafone Tower and the Bentleigh which obscure the view of the site. In addition, the site is not visible from the west of the Pacific Highway as the surrounding area slopes downward to the west from the Highway.

The surrounding area is built up with medium and low rise buildings surrounding the site to the south, east and west, with contemporary high rise buildings to the north of the site. Thus views to the site from the surrounding area will be limited.

A View Analysis for the proposed development is included at **Appendix S** which assesses the view impacts of the proposed development from the south and west along Pacific Highway and from the east.

As detailed in the Comparable Height Study at **Appendix K** there are a number of high rise commercial, mixed use and residential towers located to the north and north-east of the site with which the proposed height of the development will be compatible. Thus the proposed development will not adversely impact on views to and from the Chatswood CBD or surrounding areas as it will integrate with the scale of buildings in the immediate locality.

In addition, the proposed commercial tower includes projected façade bays at several levels which will add visual interest and articulation to the high-quality façade thereby providing an attractive view from the Pacific Highway. The articulation of the façade and high quality finish on the proposed residential tower will provide an attractive view from the east and north. In addition, the residential tower presents a very slender elevation when viewed from the north and south thereby reducing it visual impact.

Chatswood CBD is a built up urban area which does not accommodate significant views from street level. Views to the city are available from some of the upper levels of high rise development to the south of the site. The majority of these high rise building are commercial buildings or serviced apartments.

6.15 Residential Amenity

Daylight Access

The RFDC provides internal amenity controls for new residential development by setting daylight access and natural ventilation Rules-of-Thumb.

In relation to daylight access the RFDC notes that daylight consists of both diffuse light from the sky and direct beam radiation from the sun. In establishing a Rule-of-Thumb relating to daylight access the RFDC aims:

- *To ensure daylight access is provided to all habitable rooms and encouraged in all other areas of residential flat development*
- *To provide adequate ambient lighting and minimise the need for artificial lighting during daylight hours.*

Habitable rooms are defined in the RFDC as:

> *Any room or area used for normal domestic activities, including living, dining, family, lounge, bedrooms, study, kitchen, sun room and play room.*

Thus the intention of the daylight access provisions in the RFDC is to ensure that adequate **daylight** is provided to **habitable rooms** in new RFB development. To achieve the above objectives, the RFDC sets out the following Rule-of-Thumb:

> *Living rooms and private open spaces for at least 70 percent of apartments in a development should receive a minimum of 3 hours of direct sunlight between 9am and 3pm in mid winter. In dense urban areas a minimum of two hours may be acceptable.*

As Chatswood CBD is an established urban area characterised by dense, high-rise development, the two hour minimum is considered appropriate. The proposed residential tower has been orientated to achieve maximum solar access to as many units as possible.

As shown in the midwinter sun eye views below, all units at the eastern façade will receive at least 2 hours of sunlight between 9am and 3pm in midwinter to their living rooms spaces. In other words, approximately 104 apartments (50%) will receive at least 2 hours of direct sunlight to their living rooms and private open space in mid winter.

The western face of building will receive sunlight access after 1pm in midwinter. Thus 12% of the units at the western façade will receive between 0 - 2 hours of sunlight access in midwinter of which 28 apartments (the north-west corner apartments) will receive at least 2 hours sunlight to their private open space.

In addition, the north-west and south-east corner apartments receive good solar access to their bedrooms which are identified as habitable rooms under the RFDC.

Taking into account the partial solar access to the west facing apartments, solar access to the private open space of the north-west corner apartments and solar access to the bedrooms at the south-east and north-west corner apartments, approximately 160 out of 208 (or 77%) of units will receive good solar access. Although this is not strictly compliant with the Rule-of-Thumb relating to daylight access, it achieves the intent of the Rule-of-Thumb which is to ensure appropriate daylight access (including diffuse and direct light) is provided to most units in a new RFB development.

Further detail is provided in the Design Statement at **Appendix I**.

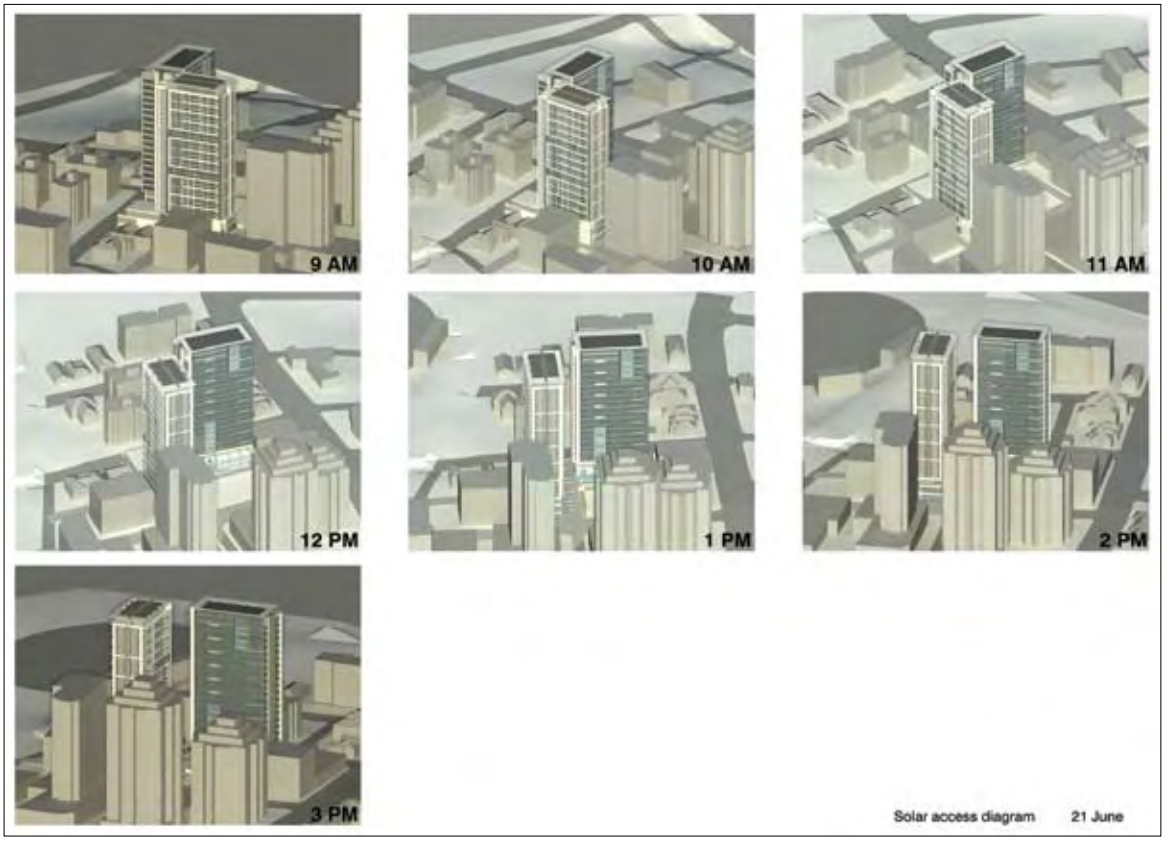

Figure 5 – Midwinter Sun Eye Views

Natural Ventilation

In relation to Natural Ventilation, the RFDC aims to ensure that apartments are designed to provide all habitable rooms with direct access to fresh air and to assist in promoting thermal comfort for occupants. To this end the Rule-of-Thumb provides that 60% of residential units should be naturally cross-ventilated and that developments which seek to vary from the Rule-of-Thumb should demonstrate how appropriate natural ventilation is achieved.

All corner apartments have excellent cross-ventilation which equates to approximately 50% of apartments in the proposed residential tower. An additional 42% of apartments have windows to two sides of their living rooms which encourages air flow into the unit. In addition, apartments are planned to have minimal internal walls and corridors to promote air flow. The RFDC Table of Compliance at **Appendix I** demonstrates that the proposed residential development does not significantly depart from the building and apartment depth controls, which encourages natural ventilation.

Thus, although the proposed development is not strictly compliant with the RFDC Rule-of-Thumb in this regard it achieves the intent of the Rule-of-Thumb in that is provides an appropriate level of natural ventilation to most units in the development. Furthermore, as noted in the Noise and Vibration Assessment, all units will have access to mechanical ventilation to ensure that internal noise criteria can be met. Thus residents will have the option of natural or mechanical ventilation in their units.

Privacy

The siting of the proposed residential tower will ensure appropriate privacy is maintained to the proposed residential units, as well as existing, surrounding residential buildings. The nearest residential dwellings are located to the south-east of the proposed residential tower and do not have a direct interface with the proposed residential units. Residential development to the south of the site on the other side of Albert Avenue is set back from the proposed residential tower by over 30 metres.

6.16 Crime and Public Safety

In accordance with the Department's guideline - *Crime prevention and the assessment of development applications* – the following Crime Prevention Through Environmental Design (CPTED) principles have been considered in the development on an appropriate design for the site:

Surveillance

The attractiveness of crime targets can be reduced by providing opportunities for effective surveillance, both natural and technical. Good surveillance means that people can see what others are doing. People feel safe in public areas when they can easily see and interact with others. Would be offenders are often deterred from committing crime in areas with high levels of surveillance. From a design perspective, 'deterrence' can be achieved by:

- *clear sightlines between public and private places*
- *effective lighting of public places*
- *landscaping that makes places attractive, but does not provide offenders with a place to hide or entrap victims.*

The design and landscaping of the proposed public through-site link/plaza, and its relationship to the private spaces in the development promotes a safe and secure environment. The through-site link has been designed to provide excellent sight-lines along the links north-south axis. These sightlines will not be obscured by the proposed tree planting as dense tree planting is not proposed.

In addition, the proposed ground floor retail uses, and residential and commercial foyers will open up to the public domain area encouraging increased casual surveillance of both the public domain and internal ground floor areas.

The proposed terrace at level 2 of the residential tower, and the balconies to units will allow causal surveillance of all street frontages including the public plaza to the west. Surveillance opportunities will also be available from the commercial tower.

The landscape plans and report at **Appendix E** describe how appropriate lighting will be provided in the public domain area. In addition, the proposed landscape design will provide for an attractive environment that discourages vandalism, but will not be result in dense planting thereby limiting the opportunity for offenders to hide in the space.

Access control

Physical and symbolic barriers can be used to attract, channel or restrict the movement of people. They minimise opportunities for crime and increase the effort required to commit crime. By making it clear where people are permitted to go or not go, it becomes difficult for potential offenders to reach and victimise people and their property. Illegible boundary markers and confusing spatial definition make it easy for criminals to make excuses for being in restricted areas. However, care needs to be taken to ensure that the barriers are not tall or hostile, creating the effect of a compound. Effective access control can be achieved by creating:

- *landscapes and physical locations that channel and group pedestrians into target areas*
- *public spaces which attract, rather than discourage people from gathering*
- *restricted access to internal areas or high-risk areas (like carparks or other rarely visited areas). This is often achieved through the use of physical barriers.*

The design of the proposed development will emphasise the public plaza with provision of a residential and commercial tower either side thereby providing a sense of enclosure to the space. The provision of landscaping and outdoor furniture in the public area will encourage people to gather in the area. Secure access to the residential tower will be provided from the residential foyer. In addition, boom gates will be installed at the entrance/exit of the car park to limit access.

Territorial reinforcement

Community ownership of public space sends positive signals. People often feel comfortable in, and are more likely to visit, places which feel owned and cared for. Well used places also reduce opportunities for crime and increase risk to criminals. If people feel that they have some ownership of public space, they are more likely to gather and to enjoy that space. Community ownership also increases the likelihood that people who witness crime will respond by quickly reporting it or by attempting to prevent it. Territorial reinforcement can be achieved through:

- *design that encourages people to gather in public space and to feel some responsibility for its use and condition*
- *design with clear transitions and boundaries between public and private space*
- *clear design cues on who is to use space and what it is to be used for. Care is needed to ensure that territorial reinforcement is not achieved by making public spaces private spaces, through gates and enclosures.*

An attractive landscape, paving, lighting and outdoor furniture design for the proposed public plaza will promote positive signals regarding ownership of the space and discourage anti-social behaviour. In addition, as detailed in the Draft Statement of Commitments at Section 7.0, a Plan of Management will be prepared for the public domain to ensure that it continues to be managed and maintained.

Space management

Popular public space is often attractive, well maintained and well used space. Linked to the principle of territorial reinforcement, space management ensures that space is appropriately utilised and well cared for. Space management strategies include activity coordination, site cleanliness, rapid repair of vandalism and graffiti, the replacement of burned out pedestrian and car park lighting and the removal or refurbishment of decayed physical elements.

As detailed above, A Plan of Management will be prepared for the public area which will address all of the above maintenance requirements.

6.17 Staging

Staging of construction on the site is expected to be undertaken in response to market demand for office space and residential units in the Chatswood CBD. At Stage 1, the basement car park will be constructed followed by the Stage 2 development of the retail space and residential and commercial towers. A detailed Construction Management Plan will be prepared for the project prior to the Construction certificate being issues. This has been included in the Draft Statement of Commitments at Section 7.0.

7.0 Draft Statement of Commitments

Table 6 – Draft Statement of Commitments

Subject	Commitments	Approved by Whom	Timing
Development Contributions	A Planning Agreement will be prepared detailing the following developer contributions for the project: - 2% of the project's CIV to be paid to Council in lieu of Section 94 contributions under Councils Section 94 Plans. - 250 public parking spaces to be allocated to Council. 40 of the proposed 250 public car parking spaces to be allocated to the residential and retail component of the development. A contribution in lieu of these 40 spaces will be paid to Council in accordance with Council's Carparking Section 94 Contribution Plan (at July 2009, the rate for each public car parking space is $26,018.62, however, the contribution will be calculated in accordance with the applicable rate at the time of payment). - 4% of residential GFA to be allocated to be dedicated to Council (all ten units at level 3) for affordable rental housing.	Welles Thomas	Planning Agreements to be finalised prior to Construction Certificate being issued.
Disabled Access	- 10% of all units will be adaptable - capable of being adapted to accommodate disabled access in accordance with AS1428.2; - Disabled access will be provided to and within every floor containing a unit required to be adaptable; - Disabled access to and within all the areas of facilities of the building where there is a reasonable expectation of access by any owner, occupier, employee or visitor will be provided in the commercial building and new retail premises.	Welles Thomas	To be confirmed prior to Construction Certificate being issued
Waste Management	A waste management plan to be prepared for the commercial, retail and residential components of the development (will include details regarding construction and operational waste management)	Welles Thomas	To be provided prior to Construction Certificate being issued.
Parking Management (Public Parking)	A parking management plan for the public car park to be prepared which will address, security, management, fees and access control etc in the proposed public car park.	Welles Thomas	To be provided to Council for approval prior to Construction Certificate being issued.
Wind Amelioration	The following wind amelioration measures to be incorporated into the design of the proposed development: - Retention of Level 1 awning on the western face of the residential building Extension of this awning to the northern face of the residential building. - Retention of Level 1 awnings on Level 1 of the office building. - Retention of the proposed glass canopy between the office and residential buildings - Addition of balustrades and awnings to the Level 2 balconies of the residential tower. - Addition of balustrades to the northern corner balconies of the residential tower and retention of the blade wall between the balconies on the southern face of the residential building. - Retention of current planting scheme (see Landscape Plan at Appendix E), with the addition of strategic ground level planting of trees and/or shrubs along the public walkway and close to the northern and southern entrances. OR - Retention of a planting scheme similar to that currently proposed (see Landscape Plan at Appendix E), and extension of the awnings located on the western and northern aspects of the residential building.	Welles Thomas	To be included on detailed construction plans.

Subject	Commitments	Approved by Whom	Timing
Public Domain	- A Plan of Management detailing the proposed management and maintenance mechanisms for the public domain to be prepared. - Repaving of Thomas Street and Albert Avenue Council footpath and appropriate street tree planting to be undertaken in accordance with Council requirements. - All services to be provided below ground	Welles Thomas.	Plan of Management and detailed plans showing paving and street tree planting to be provided to Council for approval prior to Construction Certificate being issued.
ESD	Atmosphere - Residential apartments to be designed for compliance with BCA for natural ventilation. - Air conditioning units proposed will use refrigerant R410A (mainly in packaged units) and other refrigerants with zero (0) ozone depletion potential. - Insulation will be specified and selected where no ozone depletion substances are used in the manufacture of insulating materials. - Provision of refrigerant leak detection system for major chiller plant in the commercial building to minimise ODP and GWP emissions.		
	Energy / Greenhouse Gas Abatement - The residential tower will comply with BASIX energy requirements by reducing energy use by at least 20%. - Provision of energy efficient appliances eg dishwasher, clothes washer and dryer in the apartments to improve the BASIX energy score. - Residential air conditioning will be reverse cycle water cooled package units providing energy efficient heating and cooling to the apartments. - Retail glazing to comply with deemed to satisfy requirements of BCA section J. - The office building will be designed to achieve 5 stars NABERS Energy rating. - Energy efficient lighting and fixtures will be installed. - The car park ventilation system design will be based on an engineered solution to minimise the volume of supply and exhaust air required. The reduced air flow allows the fan size and motors to be reduced providing significant energy savings. CO monitors will be installed in the car park and interlocked with the ventilation system to keep fan operation speeds and operation times to a minimum saving energy. - Energy consumption levels will be achieved by compliance with BCA Section J 'Energy Efficiency' requirements.		

	Indoor environmental quality and thermal comfort
	- Daylighting is proposed for at least 60% of the net usable commercial area.
	- Artificial lighting will be designed to comply with the requirements of BCA Section J6 and lighting loads will not exceed the following:
	  - Commercial Office - 6 W/m^2
	  - Retail Areas - 20 W/m^2
	  - Circulation Space & Corridors - 8 W/m^2
	  - Entry Lobby - 15 W/m^2
	  - Carpark - 3 W/m^2
	  - Carpark Entry - 25 W/m^2		

Subject	Commitments	Approved by Whom	Timing
ESD continued...	- Lighting to residential apartments will be fluorescent type light fixtures in accordance with the BASIX report. - High frequency electronic ballasts will be used in commercial areas to reduce the unfavourable symptoms from which some people suffer (eg eyestrain and headaches). - Provisional exhaust risers will be provided in the office tower for tenancy fitouts to assist in removing pollutants from the office environment, such as Volatile Organic Compounds (VOC's), ozone, nitrogen oxide gas, carbon monoxide and particulates. - Provisional outside air supply riser will be provided in the office tower for tenancy fitouts. - The residential units will be designed to comply with the BASIX Thermal Comfort requirements. This will result in less energy required in the use of heating and cooling of the residential apartments.	Welles Thomas	To be implemented during construction and operation of proposed development (where relevant).
	Biodiversity - Landscape design of the development will have at least 70% locally indigenous plant species. This will reduce the impact of the building development on the local environment ecology and enhance the development through the re-introduction of indigenous species.		
	Building Materials - Internal paint with zero or low Volatile Organic Compounds will be specified. - Flooring with zero or low Volatile Organic Compounds will be specified. - All composite wood products specified to be of the low formaldehyde type.		
	Waste - Minimum 60% of construction waste to be recycled for reuse. - The volume of concrete used in construction will be reduced by the use of oversized aggregate and/or aggregate will be replaced with industrial waste product. - Steel reinforcing used in concrete and steel beams will contain ≥50% post consumer recycled product. - Waste cupboard or storage area for recycling garbage on every residential floor.		

	Water Conservation
	- The residential tower will be compliant with BASIX Water requirements to achieve 40% saving in potable water use.
	- Residential, Commercial and Retail tapware and fixtures will provide the following ratings:
	  - 4 star Wels rated low flush volume water closets
	  - 6 star Wels rated flow restricted bathroom tapware
	  - 5 star Wels rated flow restricted laundry and kitchen tapware
	  - 4 star Wels rated flow restricted showers
	- Water efficient appliances will be provided in the apartments eg dishwasher and clothes washer to improve the BASIX water saving score.
	- The landscaped area will have drip feed irrigation with timed switching.
	- Rainwater Tank to be provided for basement and common area toilet flushing, filling of pool water and landscape irrigation.
	- Collection of air conditioning condensate from commercial air conditioning for recycling purposes proposed.
	- Provision of a chlorine elimination system for the pool and spa backwash facility to enable recycling for landscape irrigation purposes.
	- Fire systems will be designed to save water during test mode. Test water from the system will drain into a tank for reuse for basement and common area toilet flushing, filling of pool water and landscape irrigation.
	- Water meters will be installed for all major water uses in both buildings. The meters will be connected to a Building Management System for monitoring to provide a leak detection system.		

<table>
<tr><th>Subject</th><th>Commitments</th><th>Approved by Whom</th><th>Timing</th></tr>
<tr><td>ESD continued...</td><td>Noise
- Mechanical plant will be selected, acoustically treated and located in plant rooms and areas less sensitive to noise.
- The external and internal wall materials will be selected and constructed to comply with AS2107
Management
- An owners corporation manual will be provided prior to occupation. The Manual will describe ESD initiatives proposed for the development including energy saving measures, water saving measures, waste management, etc.</td><td>Welles Thomas</td><td>To be implemented during construction and operation of proposed development (where relevant).</td></tr>
<tr><td>Noise</td><td>Glazing to be provided in accordance with Tables 4 and 5 of the Noise and Vibration Assessment at Appendix H) as detailed in the figure below:
Table 4 – Residential Glazing<table><tr><th>Facade</th><th>Room</th><th>Glazing requirements</th></tr><tr><td>North (Thomas St)</td><td>Bedrooms</td><td>Medium to heavy weight single glazing with acoustic seals</td></tr><tr><td></td><td>Living Rooms</td><td>Light to medium weight single glazing with acoustic seals</td></tr><tr><td>South (Albert Ave)</td><td>Bedrooms</td><td>Medium to heavy weight single glazing with acoustic seals</td></tr><tr><td></td><td>Living Rooms</td><td>Light to medium weight single glazing with acoustic seals</td></tr><tr><td>East (Rail Corridor)</td><td>Bedrooms</td><td>Medium to heavy weight single glazing with acoustic seals</td></tr><tr><td></td><td>Living Rooms</td><td>Light to medium weight single glazing with acoustic seals</td></tr><tr><td>West (Pacific Highway)</td><td>Bedrooms</td><td>Medium to heavy weight single glazing with acoustic seals</td></tr><tr><td></td><td>Living Rooms</td><td>Light to medium weight single glazing with acoustic seals</td></tr></table>Table 5 – Commercial/Retail Glazing<table><tr><th>Facade</th><th>Area</th><th>Glazing requirements</th></tr><tr><td>All</td><td>Commercial / Retail</td><td>6mm / 12mm air gap / 6mm</td></tr></table>Figure 6 – Proposed glazing requirements
Air conditioning to be installed to meet AS 1668.2 requirements. Any mechanical ventilation system that is installed will be acoustically designed such that the acoustic performance of the recommended constructions are not reduced by any duct or pipe penetrating the wall/ceiling/roof. Noise emitted to the property boundaries by any ventilation system will comply with DECCW Guidelines.</td><td>Welles Thomas</td><td>Details to be provided as part of detailed construction plans.</td></tr>
<tr><td>Groundwater</td><td>Groundwater flows to be controlled by draining to a sump at the lowest basement level for pumped disposal to the stormwater system.</td><td>Welles Thomas</td><td>Details to be included in detailed construction plans.</td></tr>
<tr><td>Construction Management Plan</td><td>A Construction Management Plan will be prepared for the proposed development to manage construction activity (including waster management, traffic management, road closures and proposed construction hours) in a way that will minimise and adverse impacts.</td><td>Welles Thomas</td><td>Prior to Construction certificate being issued.</td></tr>
<tr><td>Road closure plan</td><td>A plan for the closure of Fleet Lane and development on the new vehicle access from Fleet Lane to Thomas Street will be prepared and submitted to Council for approval. It is proposed that development of the re-directed Fleet Lane access will form part of the early works on the site to ensure that impacts on traffic circulation in the area are limited.</td><td>Welles Thomas</td><td>Plan for closure and redirection of Fleet Lane to be submitted to Council prior to issue of Construction Certificate.</td></tr>
</table>

6.0 Conclusion

The proposed mixed use development at the site of the existing Council car park at Thomas Street and Albert Avenue, Chatswood will provide for a high-quality commercial, retail and residential development on this currently underutilises site, at the same time as ensuring that the casual parking needs for the Chatswood CBD continue to be met.

The proposed development generally complies with relevant development controls set by SREP 5 and is consistent with strategic planning provisions for the Chatswood CBD including the intention of the draft Willoughby LEP which will increase density and heights controls on the site. In addition, the design for the development has considered the provisions of Council's local planning controls, in particular the site-specific controls in WDCP.

The proposed development will provide an attractive landscaped open space which will be public accessible and a through-site link which will increase pedestrian connectivity in the CBD. The proposed ground floor retail uses will activate the Thomas Street and Albert Avenue streetscapes, as well as promote a lively and amenable pedestrian environment in the public plaza area.

The proposed residential development has been designed to achieve maximum amenity to units on the site and to ensure that high quality residential accommodation is available in close proximity to the public transport and services. The provision of 4% of the residential GFA on the site will promote a diverse social mix and assist in meeting the affordable housing needs for the Willoughby LGA. In addition, the provision of some 19,000sqm NFA of A-Grade office space will continue to promote the Chatswood CBD as an employment centre.

The proposal is considered to be in the public interest as it provides for the development of this currently under-utilised site for a range of uses that are permissible in the zone. The proposal will maintain the existing number of public car spaces on the site, and provide additional public parking in excess of the existing amount. The new public car park will be more efficient and safer than the existing as it will be below ground. In addition, the development will provide 10% of the residential GFA as affordable housing which will have a positive social impact. The provision of some 1,800sqm of high-quality, landscaped open space (with associated through-site link) will not only provide additional passive recreational space in the locality (without burdening Council with maintenance costs) but will also improve pedestrian connectivity in the Chatswood CBD. The provision of high-quality residential, commercial and retail GFA in the locality is consistent with State Government objectives to provide residential accommodation and employment-generating activities in close proximity to public transport. The proposed development will therefore provide a number of tangible public benefits.

The development has been designed to minimise environmental impacts on the surrounding area at the same time as providing a visually interesting, high quality development at this gateway to the Chatswood CBD. All issues raised in the DGRs have been appropriately responded to and the Project Application for a mixed use development on the Thomas Street car park site is considered worthy of the Department's approval.